









**ELEMENTARY CLASS-BOOK**  
**OF**  
**GENERAL GEOGRAPHY.**



AN  
ELEMENTARY CLASS-BOOK  
OF  
GENERAL GEOGRAPHY

BY  
HUGH ROBERT MILL,  
D.Sc., F.R.S.E.  
LECTURER ON PHYSIOGRAPHY AND ON COMMERCIAL GEOGRAPHY IN THE  
HERIOT-WATT COLLEGE, EDINBURGH

London  
MACMILLAN AND CO.  
AND NEW YORK  
1880

*All rights reserved*





## PREFACE

THE aim of the present volume, as of all elementary class-books of geography, is to give a brief account of the Earth as the dwelling-place of mankind. The descriptions throughout proceed from the general to the particular. Chapter I. describes the general principles on which geography depends. Chapters II and III give the outlines of physical geography, or the natural conditions of the Earth as a whole. The remaining chapters are devoted to more detailed descriptions of the continents. The position and natural features of each continent are first described in simple narrative form, the mountains, plains, and rivers are not enumerated in separate lists, but named as they actually occur, thus impressing the relation of mountain ranges to rivers, and of rivers to plains. The races of mankind inhabiting the several continents are referred to, and the main lines of their migrations are laid down on the basis of configuration and climate. The natural region which each modern country occupies is next more fully described in its relation to the continent. Its configuration, climate, and natural products of commercial value are indicated. The salient points of the nation's history are cited to explain how the struggles and migrations of races have gradually produced the existing people and determined the actual boundaries. Then

follows in connected form an account of the most important towns with their leading characteristics. The connecting thread of this enumeration varies; thus in Britain it is the coal-fields, the main source of national wellbeing; in France, which is exceptionally centralised, it is the almost geometrical railway system; in Austria-Hungary, the most heterogeneous country of Europe, it is the provinces; and so on.

Especial prominence is thus given to the permanent features of topography; the extent and boundaries of countries, though definitely given, being presented merely as temporary conditions. This plan, it is believed, is novel. It was, therefore, impossible as well as undesirable to base the work on any existing treatise. The sources of information consulted have been numerous, and care has been taken to verify all the facts mentioned by reference to authoritative writings wherever this was practicable. The topography is mainly from Sydow-Wagner's *Methodische Schul Atlas*, in which the highest development of German cartography is made available for school use. Reclus's *Nouvelle Geographie Generale*, and Stanford's *Compendium of Geography and Travel* were frequently consulted, and most of the statistics are from Mr. Keltic's *Statesman's Year-Book* for 1889. The best British, American, German, French, and Swiss geographical text-books have been referred to. Several countries and most of the British colonies are described from official maps and reports.

The numerous tables of statistics are intended only for reference; they are full of suggestions to the teacher, but it would serve no good end to compel the scholar to commit them to memory.

The author has endeavoured to bring the facts down to date, but changes are constantly in progress with

which it is advisable that the teacher should keep pace by consulting geographical journals and the daily papers.

• The varieties of type employed in the text are intended to assist the eye in gathering the most important facts. Heavy type is employed for the headings and the most important words in each paragraph, and capitals of that type for the names of independent countries and of colonies with separate governments. Italics are employed for synonyms, usually for quotations and for the names of provinces, subordinate states, or counties. Old English type distinguishes the seats of government of countries, and the approximate population in thousands by the latest census or estimate available is added parenthetically. The names of other towns are printed in capital letters when the population exceeds 100,000; in small capitals when it falls short of this number; but these distinctions are only applied at the time of first mentioning. There are practically no footnotes.

No maps are inserted, as the use of a good atlas is in any case essential. The importance of map-drawing cannot be too strongly insisted on as an exercise. Illustrations of characteristic scenes in different countries have been specially prepared to supplement the descriptions, and will, it is hoped, add both to the attractiveness and educational usefulness of the book. For the care with which the drawings have been prepared, the author is much indebted to the artist, Mr. R. J. Pritchett. The United Kingdom, for the reason assigned in the text, is only briefly noticed. Other countries are described in a number of pages proportional to their area or the density of their population. The former consideration secures more space for such countries as Brazil, the United States, Russia, and China than is usual in small English class-books; the latter gives a detailed account of Belgium and Holland



quite out of proportion to their area. Each country has been looked at from the standpoint of a native, thus giving a truer conception of it than could be conveyed by dwelling merely on its importance to the British nation.

Care has been taken to write simply and, if possible, forcibly, to be accurate in statements, consistent in the orthography of names, and to introduce facts of as interesting a nature as is possible without losing sight of the serious educational aim of the whole. Information as to shortcomings in these particulars will be welcomed.

The author must in conclusion tender his hearty thanks to the Editor, whose careful revision and numerous suggestions have enhanced the value and improved the expression of these pages.

H. R. M.

HERIOT-WATT COLLEGE, EDINBURGH,  
*May 1889.*

# CONTENTS

CHAP.	PAGE
1. GEOGRAPHY IN GENERAL . . . . .	1
2. PHYSICAL GEOGRAPHY . . . . .	13
3. DISTRIBUTION OF LIVING CREATURES. . . . .	39
4. THE CONTINENT OF EURASIA . . . . .	51
5. THE BRITISH ISLANDS . . . . .	64
6. NORTH-WESTERN EUROPE . . . . .	73
7. SOUTH-WESTERN EUROPE . . . . .	87
8. CENTRAL EUROPE . . . . .	101
9. SOUTHERN EUROPE AND WESTERN ASIA . . . . .	124
10. EASTERN EUROPE AND NORTHERN ASIA . . . . .	142
11. SOUTHERN ASIA . . . . .	156
12. EASTERN ASIA . . . . .	180
13. THE CONTINENT OF AUSTRALIA . . . . .	194
14. THE COLONIES OF AUSTRALIA . . . . .	203
15. ISLANDS OF THE PACIFIC OCEAN . . . . .	219
16. THE CONTINENT OF NORTH AMERICA . . . . .	230
17. ARCTIC AMERICA . . . . .	240
18. THE DOMINION OF CANADA . . . . .	245
19. SOUTHERN NORTH AMERICA . . . . .	255
20. CENTRAL AMERICA AND WEST INDIES . . . . .	281
21. THE CONTINENT OF SOUTH AMERICA . . . . .	291

CHAP.	PAGE
22. WESTERN COUNTRIES OF SOUTH AMERICA . . .	299
23. EASTERN COUNTRIES OF SOUTH AMERICA . . .	310
24. NORTHERN COUNTRIES OF SOUTH AMERICA . . .	320
25. THE CONTINENT OF AFRICA . . . . .	325
26. COUNTRIES OF NORTHERN AFRICA . . . . .	335
27. COUNTRIES OF CENTRAL AFRICA . . . . .	345
28. COUNTRIES OF SOUTHERN AFRICA . . . . .	352
29. THE ANTARCTIC REGIONS . . . . .	366

## LIST OF ILLUSTRATIONS

Fig.	PAGE
1. A PASS IN THE HIMALAYA MOUNTAINS, TWO MILES ABOVE SEA-LEVEL . . . . .	51
2. A STREET IN LONDON . . . . .	64
3. VIEW IN A NORWEGIAN FJORD. . . . .	73
4. A SCENE IN HOLLAND . . . . .	81
5. TOWN OF THE BELGIAN BLACK COUNTRY . . . . .	85
6. VIEW ON THE TAGUS AT LISBON . . . . .	87
7. CROSSING THE STEPPES IN WINTER . . . . .	142
8. TARTAR RAID ON A FARM IN SOUTH-EASTERN SIBERIA . . . . .	153
9. INDIAN OX-CART DRAWN BY A ZEBU OR HUMPED OX . . . . .	156
10. A BATHING GHAT AT BENARES, ON THE GANGES . . . . .	168
11. A SCENE IN JAVA . . . . .	176
12. CHINA'S SORROW. THE YELLOW RIVER IN FLOOD . . . . .	180
13. SCENE IN A CHINESE VILLAGE . . . . .	185
14. CHARACTERISTIC ANIMALS OF AUSTRALIA . . . . .	194
15. A VIEW ON THE ZIG-ZAG OF THE BLUE MOUNTAIN RAILWAY . . . . .	203
16. A FERN FOREST IN NEW ZEALAND . . . . .	219
17. A PRAIRIE FIRE . . . . .	230
18. BROOKLYN SUSPENSION BRIDGE . . . . .	239
19. ON THE GREAT BANKS IN WINTER. FISHING SCHOONERS AT WORK . . . . .	245

FIG.	PAGE
20. RIVER STEAMERS IN NEW YORK HARBOUR . . .	255
21. OIL WELLS IN PENNSYLVANIA . . . . .	264
22. ON THE AMAZON. TROPICAL VEGETATION . . .	291
23. ON THE LIMA AND OROYA RAILWAY. AMONG THE CLOUDS .	299
24. A CATTLE FARM ON THE PAMPAS . . . . .	310
25. AN OASIS IN THE SAHARA . . . . .	335
26. A STREET IN CAIRO . . . . .	342
27. BRITISH MAN-OF-WAR'S CUTTER AND STEAM-LAUNCH CAPTURING AN ARAB SLAVE DHOW . . . . .	345
28. AFRICAN EXPLORER ON THE MARCH . . . . .	350
29. THE ANTARCTIC ICE-WALL AND ICEBERGS . . .	366
30. A VIEW IN KERGUELEN LAND . . . . .	368

## LIST OF ERRATA AND ADDITIONS.

March 1890.

PAGE	LINE	
vi	21,	for " <i>Generale</i> ," read " <i>Universelle</i> ."
44	19,	for 310, read 312.
71	19,	after on, insert <del>the</del> river Avon close to.
94	7,	after BELFORT, insert one of a chain for defending the frontier.
94	10,	<del>delete</del> and his army.
119	8	from foot, for it is, read until 1889 it was.
192	11	from foot, for south-east, read south-west.
193	7	from foot of table, for Lim. Mon., read Absolute.
193	4	,, for Absolute, read Lim. Mon.
201	20,	for five, read seven.
207	12	from foot, for thousands, read hundreds.
211	10	from foot, after Queensland, insert except that the members of the Legislative Council are elected by the well-to-do people of the colony, and those of the Legislative Assembly by all the grown men.
213	14,	for most, read much.
213	8	from foot, for " <i>Coorong</i> ," read " <i>Coorong</i> ."
214	3,	after resource, insert next to wool.
214	15,	after of, insert some of.
214	17,	after legislature, insert as in Victoria.
225	1,	after only, insert native.
256	18,	after however, insert had previously.
257	2,	add a new star and stripe are added for each State admitted into the Union.
260	9	from foot, after are, insert amongst.
262	10	from foot, after built on, insert Manhattan Island, the extremity of.
266	6	from foot, after MOBILE, insert BIRMINGHAM in the north of Alabama is a centre of coal and iron fields; the name sug- gests its manufactures.
	9,	after whole, insert business part of the.

## LIST OF ERRATA AND ADDITIONS

### PAGE LINE

- 269 19, *add* and another finished in 1888, which is 4 miles long.
- 273 *last line, delete* territory.
- 274 9, *for* territories, *read* territory.
- 274 10, *for* Montano, *read* State of Montana.
- 275 3 *from foot, for* territory, *read* State.
- 279 9 *from foot, delete from* A line passes to from sea to sea.
- 301 17, *note*, the boundaries of Ecuador were altered and the area reduced in 1889.
- 307 12 *from foot, for* ANTOFAGASTA, *read* ANTOFAGASTA.
- 307 11 *from foot, for* COPIABA, *read* COPIAPO.
- 307 8 *from foot, substitute* LA SERENA with the adjacent seaport of COQUIMBO in 30° S., mark the division.
- 308 18, *for* CHILLOS, *read* CHILLAN.
- 315 3 *from foot, for* Empire, *read* United States; *and after* Brazil, *insert* long.
- 317 10 *from foot, note*—In 1889 the Emperor was banished and a republic declared.
- 328 5, *after* south, *insert* Mount Ruwenzori discovered by Stanley, east of Albert Nyanza, also exceeds 18,000 feet in height.
- 329 13 *from foot, add*—The Albert Nyanza receives the Semliki river from the Albert-Edward Nyanza (formerly called Muta Nzige) on the south. Both lakes lie in the hollow of a great cleft running from the Nile to the Zambesi, and occupied also by Lakes Tanganyika and Nyassa.
- 344 5, *add* and brought him back to the East Coast in November 1889.
- 344 7, *after* Abyssinia, *insert* taken under Italian protection in 1889.
- 346 4, *after* and, *insert* is being opened up to commerce by the Imperial British East African Company from the fine harbour of MOMBASA.
- 346 4, *after* it, *insert* is.
- 346 5, *delete* in name at least.
- 346 15, *after* Delgado, *insert*—This strip of land was ceded to the British and German East African Companies in 1889.
- 351 2, *after* LEOPOLDVILLE, *insert* on Stanley Pool.
- 351 8, *add*—The number of stations held by the State varies from time to time on account of the hostility of slave-raiding Arabs and savage natives.
- 353 5 *from foot, for* Berge, *read* Bergen. *and so throughout*.
- 354 6, *for* west, *read* east.

## CHAPTER I

### • GEOGRAPHY IN GENERAL

1. The *word* **Geography** means the description of the Earth. This would include an account of the position and motions of the Earth amongst the other bodies of the universe, of the form, size, and materials of our world, the history of those changes in past ages which have brought about the present condition of land and sea, and finally the form of land and sea, mountain and valley, with their various climates, and the animals and plants which live in them. But the *name* Geography means less and more than this. Less, because it only includes the description of the surface of the Earth, and that in its present state, leaving to astronomy the description of the world as part of the universe, to geology the study of the materials and history of our planet, to meteorology the laws of climate, and to biology the description of plants and animals. More, because it takes notice not only of natural divisions and varieties, but of differences made by men which are often invisible yet quite real. Such are the boundaries of the separate countries which are inhabited by various peoples, the way in which the inhabitants live and use the natural productions of the country, the towns they build, and the position of the roads, railways, and water-ways, which serve as means of communication between them.

2. To understand geography properly, it is necessary to know something of the causes which have led to the present arrangement of land and water, the kinds of climate and the distribution



of animals, as well as something of the actual things themselves. This kind of preliminary knowledge is called **Physical Geography**, and is treated of in separate books, a very clear and interesting one being Geikie's "Elementary Lessons in Physical Geography." Something should be known also of the causes which led to the movements of mankind, and the wars which were necessary to form and change the position and size of countries: this kind of preliminary knowledge is **History**, and, like the other, must be studied in special text-books. But both of these branches—the history of the Earth with its animals and plants, and the history of the human race—are from the point of view of geography valuable only in explaining how the dry land has come to be what and where it is, and how countries have acquired their present limits. The continents and islands as the dwelling-place of men, and the oceans as affording communication between them, are the main subjects of geography.

3. The different ways of looking at the Earth's surface and describing it have received special names.

**Political Geography** describes the regions of the Earth with regard to the countries actually occupying them, the position of towns and the modes of government of the people. It is liable to more changes than physical geography. For instance, although there is no change in the land that once was called the Kingdom of Poland, now one portion is called Russia, another Austria, and a third Germany. Similarly the region between the Rhine and the Bay of Biscay is the same now as it was thirty years ago; but there is now no Empire of France, the ground is occupied by the French Republic and a portion of the German Empire.

**Commercial Geography**, or a description of the countries of the world with respect to the discovery, production, transport, and exchange of useful things, is subject to still more rapid and uncertain changes, though both the nature of the regions and the boundaries of the countries remain the same.

**General Geography** is the description of the Earth's surface giving some attention to all these features, but not entering into the minute details of any.

4. The basis of geography is an accurate knowledge of the form of the land and water surface of the globe in their infinite varieties of plain, mountain, and valley, river, lake, and sea, town and nation. This study, to which the name *topography* should properly be given, is often called geography, and that is why geography is supposed by many people to be only a dry catalogue of capes, rivers, boundaries, and famous towns. But it really includes these only as the skeleton on which a body of the greatest variety, beauty, and interest is built up.

5. **Historical Geography.**—The earliest races of men who paid attention to the topography of the world first described their own surroundings, and gradually explored to greater and greater distances, gathering, as time went on, a fuller and truer idea of the form and arrangement of the world, and the way of getting from one place to another. Their means of measurement were very poor at first, and their attempts to describe positions so unsatisfactory that many volumes have since been written all in vain to prove where some of the places they described most carefully really are.

6. Geographical exploration must thus have started from more than one centre, and when we speak of China or America being unknown 2000 years ago, we merely mean that the people living about the Mediterranean, from whom we have got all our history and most of our ways of thinking, did not know about them at that time. At the beginning of written history the Mediterranean Sea, with the lands bordering it, was well known, and had been described by men who had visited all parts of it. Armies and merchants found their way into the interior of the three continents of Europe, Asia, and Africa, and kept a record of the number of days taken in the journey between important places. Galleys with sails and oars crept out between the "Pillars of Hercules," as the two opposite headlands at the entrance of the Mediterranean Sea were called, and steered northward close along the coast to the British Islands and the Baltic Sea, gradually finding out about those distant lands and their barbarous inhabitants. It was not until 400 years ago that the coast of Africa was traced out to its most southerly limit by

adventurous Portuguese sailors, and a sea-road discovered to India from Europe. At the same time, in consequence of improving knowledge of the size and shape of the Earth, the brave Italian Columbus reached America; and in a century or so more the main work of the great sea-explorers or "circumnavigators" was finished, for the position of all the continents and oceans, and the way from one to the other, had been found out. Even yet, however, the exact position of many places on the Earth's surface has not been quite decided, although the way to do it is now perfectly well known.

7. **Position on the Earth.**—In order to understand how we can describe where places are situated on the Earth, we must remember that the Earth is a great ball turning on its axis and travelling round the sun. To one's first thought it would seem easier to measure distances and fix positions on a globe at rest than on one that is always spinning and whirling through space; but this is not the case. The spinning or rotation, which is always in the same direction, gives the Earth a kind of two-endedness, called **polarity**. A top spinning steadily turns about a central line, or what is called an **axis** of rotation, one end or **pole** of which is the point it balances on, the other the centre of its upper surface; and we can speak of any point on the top as being so many inches or millimetres from either end or pole. Similarly the position of any place on the Earth's surface can be spoken of as so many miles or degrees from either pole. When anything is spinning rapidly, the direction of its axis cannot be easily changed. The axis of the Earth consequently always points in the same direction. It so happens that one pole points very nearly to a bright star, which is therefore called the *pole-star*. This star appears in the same part of the sky all night long, but all the other stars, and likewise the sun and the moon, seem to go round the Earth in circles, of which the pole-star is the centre. This motion of the stars is like the apparent motion of a railway station when one looks out of a gently starting train. The heavenly bodies appear to move only because our own motion is so uniform and steady that we never feel it. The pole of the Earth which points to this central star is called the **north**.

**pole**, and the half of the world from which the pole-star is visible at night is called the **northern hemisphere**. If an explorer were able to struggle through the ice to the north pole of the Earth he would see the pole-star in the *zenith* or right overhead. A traveller standing midway between the two poles sees the pole-star just on the northern horizon. The line round the world which is midway between the poles is called the **equator**, since it divides the Earth into two *equal* parts, which are conveniently termed the northern and southern **hemispheres** or half-balls. Any one half-way between the north pole and the equator sees the pole-star half-way between the horizon and the zenith, and in fact the altitude of the pole-star (*i.e.* its height in the sky) depends only on the position on the Earth's surface from which it is viewed. Thus, if we measure the distance on the quadrant (or *quarter-circle*) of the sky from the horizon to the pole-star, the very same figure gives our own relative position on the quadrant of the Earth's surface between the equator and the north pole. This is called the **latitude**, as the old dwellers by the Mediterranean Sea who first used the word, knew a far greater distance from east to west than from north to south, and so called the former *longitude* or length, and the latter *latitude* or breadth. Latitude is measured in degrees, there being 90° between the equator and the pole. As the pole-star is not visible in the daytime nor at any time south of the equator, it is more convenient in practice to measure the altitude of the sun at noon, when it is highest in the sky, and then to find from the *Nautical Almanac*, which has been prepared by astronomers for that purpose, the angular distance of the sun from the pole of the heavens. The altitude of the pole, and consequently the latitude of the place, is thus measured indirectly but quite accurately; and this is done every day in all ships making ocean voyages in order to find their exact position.

8. **Latitude** is measured in degrees because altitude is measured in degrees by the *sextant* (an instrument in the form of the *sixth part* of a circle, made for the purpose), and it is reckoned from the equator north and south. Thus it happens that the latitude of all places near the equator is expressed by a

low figure, and these are often spoken of as in **low latitudes**, while places near the poles where the latitude is expressed by a high figure (something approaching  $90^\circ$ ) are said to be in **high latitudes**. It is necessary in giving the latitude of any place to say whether it is in the northern or southern hemisphere, and this is expressed by a letter after the figures; for instance, forty-five degrees north of the equator is written as  $45^\circ$  N.; and forty-five degrees south of the equator as  $45^\circ$  S.

9. **Longitude.** — It is evident that the latitude is not enough to tell where a place is on the Earth's surface; for when we speak of a place as in  $50^\circ$  N. lat., we only fix it in one direction; certainly it can lie no farther north or south, but it may lie to the right hand or the left, i.e. to the east or the west, or may even be moving in either direction. The circles of latitude are called *parallels*, because they are parallel to the equator. The rotation of the Earth, which gives it polarity, and so supplies us with fixed points for reckoning latitude, also enables us to fix the position of any place in its parallel. The Earth turns round always in the same way; the side towards which it turns is called the **east**, a word meaning *dawn*, because the sun appears to rise there every morning, and the side from which it turns the **west**, a word meaning *rest*, because the sun seems to go to bed there every night. Looking to the north the east is always on one's right hand, and the west on the left. The words east and west can only be used of one place in relation to another on the Earth's surface; there is nothing like an east or a west pole, and so there is no natural point or line from which to measure the **longitude** of any place, that is, its distance east or west of any other place.

10. **Time.** — The Earth turns round on its axis once in twenty-four hours, and so every part of it comes directly opposite the sun once in the day, and the time when this position is reached, and when the sun appears highest in the sky, is called noon or twelve o'clock. As it is noon at the same moment at all places which lie in a direct north and south line, this north and south line is called the **meridian** or *mid-day line*, and the longitude of a place is reckoned by the meridian, as the latitude is

by the parallel passing through it. Since the Earth turns from west to east with a velocity of  $360^\circ$ , that is, a whole circle, in twenty-four hours, or  $15^\circ$  in one hour, or  $1^\circ$  in four minutes, a place which has its noon one hour before another lies  $15^\circ$  east of the latter. To find the longitude of different places on the surface of the Earth, it is necessary to fix a zero or starting-line to count from, and to know what o'clock it is there. Every nation once used a meridian of its own for reckoning longitude—the Americans used that of Washington, the Germans that of Berlin or of Ferro (one of the Canary Islands), and the French that of Paris. All civilised nations, except the French, now employ the meridian passing through Greenwich Observatory, as  $0^\circ$  of longitude. If an observer at any part of the world has a chronometer, or very accurate watch, keeping Greenwich time, he can tell his longitude by noting the passage of the sun over the meridian, that is, the exact time of noon when the sun reaches the highest point in its daily path. Suppose this to be at seven o'clock in the morning by the Greenwich chronometer, this means that it will not be noon at Greenwich for five hours yet; and as the Earth rotates from west to east, five hours must elapse before Greenwich is brought directly under the sun, therefore this place must be  $5 \times 15^\circ = 75^\circ$  east of Greenwich.

11. By means of the latitude and longitude of any place, one can describe its position on the Earth's surface with accuracy. Thus, although a whole circle of the Earth has the latitude  $50^\circ$  N., and a half circle of the Earth crossing it at right angles has the longitude  $10^\circ$  E., only one point in the world, that where the two lines intersect, has the position of  $50^\circ$  N. and  $10^\circ$  E. Degrees ( $^\circ$ ) of circular measure are divided into 60 minutes ( $'$ ), which are in turn divided into 60 seconds ( $''$ ). A minute of latitude is a sea mile or nautical mile, a second of latitude is 100 feet. There are 69.19 British miles in the degree of latitude.

It is at once evident from the form of the Earth that degrees of longitude differ greatly in length, being nearly equal to those of latitude at the equator, and diminishing to nothing at all at the poles. A point about half a mile from the pole, for instance, takes twenty-four hours to accomplish its journey of

3 miles, so that each degree is 45 feet in length in that latitude, while a point near the equator travels 24,000 miles in the same time, and the degree, or 360th part of its circuit, is 69 miles.

TABLE OF LENGTH OF DEGREE OF LONGITUDE.

Latitude	Miles in 1° long.	Latitude.	Miles in 1° long.
0°	69	50°	44½
10	68	60	34½
20	65	70	23½
30	60	80	12
40	53	90	0

**12. Effects of Inclined Axis.**—The axis of the Earth is not perpendicular to the plane in which the planet revolves round the sun (the **plane of the Ecliptic**), but is inclined to it at an angle that remains the same, so that each pole is on the whole turned towards the sun during half of its annual revolution, and away from it during the other half. This produces seasons, and also differences in the length of days and nights in different latitudes. The inclination of the Earth's axis is  $23\frac{1}{2}^{\circ}$  from the perpendicular, so that when the north pole inclines towards the sun (June 20), the rays of light and heat fall  $23\frac{1}{2}^{\circ}$  beyond the pole; and as the Earth rotates, all the region less than  $23\frac{1}{2}^{\circ}$  from the pole, that is, in latitudes higher than  $66\frac{1}{2}^{\circ}$  N., remains in light, and there is no night. The border of this area of daylight for twenty four hours on midsummer day is called the **Arctic Circle** (from the Greek word *arktos*, meaning *Bear*, because the stars in the constellation of the Great Bear are the most conspicuous within it). At this time the south pole is of course turned from the sun to the same extent, and no light at all falls on the region south of  $66\frac{1}{2}^{\circ}$  S., this limit being called the **Antarctic Circle**. The sun shines straight down on all places  $23\frac{1}{2}^{\circ}$  north of the equator, and this circle of vertical sun on the northern midsummer day is called the **tropic of Cancer**, because when on it the sun appears in the constellation of Cancer or the Crab, and turns (Greek *tropos*, a turning) to go south again after touching it; it is the farthest north limit where a vertical sun can be experienced. As the Earth wheels on its orbit it reaches a point on September 20, where neither pole is inclined

towards or from the sun. At this date the sun shines overhead on the equator, and day and night continue for twelve hours each over the entire world. This period is spoken of as the autumnal *equinox*, a Latin word meaning *equal night*, because day and night are equal everywhere. In three months more the south pole is directed towards the sun (December 21), and all places within the antarctic circle have daylight for twenty-four hours on the northern mid-winter day, while all within the arctic circle are in total darkness at the same time. The sun appears vertical at places  $23\frac{1}{2}^{\circ}$  south of the equator, a line known as the **tropic of Capricorn**, since the sun is then among the stars of the constellation of Capricorn or the Goat, and this is the highest south latitude for a vertical sun. By March 21 the poles are again neither inclined towards nor from the sun, which once more shines vertically on the equator, and day and night are equally shared by all the world.

13. When the sun is vertical the heat and light poured down on the Earth's surface are the greatest possible, but the lower in the sky the sun appears and the more obliquely the rays reach the Earth the less is the heating effect, partly because the rays are spread over a much wider area, partly because they pass through much more of the atmosphere which absorbs them. In consequence of this the warm season or summer occurs when the sun shines highest in the sky, that is, in June in the northern, and in December in the southern hemisphere; the cold season or winter occurs when the sun is lowest, December in the northern hemisphere, June in the southern.

14. From the relation of the different parts of the Earth to the sun the surface has been divided into five zones of climate: (1) the **torrid zone** extending  $23\frac{1}{2}^{\circ}$  north, and the same distance south of the equator, i.e. between the tropics. Within the torrid zone the sun is overhead at every place twice in the year; (2) the two **temperate zones** in which the sun is never either overhead at noon or under the horizon for twenty-four hours at a time; they stretch from the tropics to the arctic and antarctic circles respectively; (3) the two **polar zones** within the arctic and antarctic circles; here all places have at least one day



the year when the sun is twenty-four hours above the horizon, and one when it is twenty-four hours beneath it.

**15. Direction.**—When the sun or the stars are invisible it is necessary to have some other means for finding the direction. For thousands of years navigation and geographical discovery were kept back because sailors had no way of keeping to a steady course in cloudy weather. The compass was invented in the thirteenth century after the discovery that a piece of steel rubbed with a lodestone pointed north and south when balanced so that it could easily turn. The **Mariner's Compass** consists of one, two, or more magnetic needles fixed to a card which is balanced on a fine point, and the brass bowl containing it hung on gimbals, an arrangement by which it remains level and steady, however much the ship may toss about. The card is marked with 32 "points," each of which has its name; four of these—North, East, South, and West—are called *cardinal* or chief points, and are placed 90° apart. Each point is divided into quarters, but it is becoming usual to count the space between the cardinal points in degrees. Thus instead of North-east (N.E.) the direction is called North 45° East (N. 45° E.), and instead of the clumsy expression which the common sailor understands, *West by north quarter north northerly*, the more precise name of W. 15° N. is applied. The magnetic needle points not to the north pole of the Earth but to a point near it called the *magnetic pole*, and consequently in most parts of the world a correction must be made for this variation. Thus at present (1889) a compass needle points N. 16½° W. in the south-east of England and N. 24° W. in the north-west of Ireland. Over the whole Atlantic and most of the Indian Ocean the deviation of the magnetic needle is to the west of true north, while over the Pacific and the eastern part of the Indian Ocean it is to the east of true north, and along the dividing lines between those two areas the compass points correctly.

**16. Pictures or Maps** may be used to show the position and nature of places on the surface of the Earth. A picture of a piece of country brings the form of the hills, the position of the woods and streams, and of houses vividly before the mind,

but that is all. A map of the same district conveys very little information to a passing glance, but when examined carefully it tells a great deal more than any picture. In the map the places are set down in their true positions, so that the distances between them can be measured on the paper, and when we know the scale the distances of the real places from each other can be found at once.

**17. The Difficulty with Maps.**—A map on the scale of 1:10,560, or 6 inches to the mile, would, if magnified 10,560 times every way, form a carpet exactly fitting the region it depicts, if that region were a level plain, and every house and tree would stand upon the space marked out on the magnified map as belonging to it. But if there is a gently sloping hill in such a district the map-carpet would not lie smoothly, and would, in fact, need to be laid *under* the hill; then if we imagine the hill transparent, the various places on the slopes would stand above the sketch of them on the map. The world is a ball, consequently if we represent a large part of its surface on a map, say on the scale of 1:20,000,000, that map magnified 20,000,000 times would form a very badly-fitting carpet indeed. It is necessary to use some artifice to make a map on a flat surface represent part of a sphere accurately. Such an arrangement is called a *projection*.

**18. Map Projections.**—For sailors, who wish to know the direction between one place and another, maps of the world are made on what is called **Mercator's Projection**, after an old geographer whose Latin name was Mercator. They show the land and sea as they would appear if the Earth were transparent, and a powerful light at the centre threw shadows of the continents upon a great sheet of paper wrapped round the world, touching along the equator. Places on the equator are shown of their proper size, those near the poles are far too big, although the shape of any small portion is right. The peninsula of Greenland, for example, appears on a Mercator map to be larger than South America, though it is really smaller than India.

Another way of making a map, which is usually more convenient to use, is on what is known as the **Conic Projection**. In this there is much less distortion of distance, although there is some change of shape. Maps on *equal surface* projections are

exactly correct so far as area is concerned, but the form of the land is greatly distorted. The whole question of map-making and map-reading is so important that a special volume is devoted to it, and this must be consulted for particulars.

Parallels of latitude and meridians of longitude are always represented on maps in order that places may be readily found, indeed it is by these lines of latitude and longitude that the maps are made in the first place; but these parallels and meridians are not real marks on the surface. Sailors sometimes play tricks on ignorant passengers, in the tropics by letting them see the equator through a telescope, but the black line that seems to traverse the ocean from west to east is merely a bit of thread fastened across one of the lenses.

**19. Uses of Maps.**—Maps are made to show the outline of parts of the world, the rivers, lakes, roads, and positions of towns, but much more than this can be represented. By means of shading or contour lines, that is, lines passing through all places at the same height above or below sea-level, maps can show the position and steepness of mountains and table-lands. In the same way any natural condition which is different in different parts of the world can be laid down on maps, such, for instance, as the kind of rocks, the boundaries of countries, the rainfall, the temperature, the limits of different kinds of plants and animals, the density of population, and many other things.

In studying geography maps of two kinds are absolutely necessary—one a physical map showing the heights and hollows of the land, the mountains, high plains, low plains, valleys, rivers, lakes, and other topographical features; the other a political map, showing the larger boundaries, such as those of countries, the small divisions into states, provinces, or counties, the position of all important towns, roads, and railway lines. Geography becomes very interesting when the proper use is made of maps, for from a good map one can after a little practice call up a sort of picture of the place to the mind's-eye, and the descriptions of the text-book may then be used to fill in this picture, and so almost give an idea of the country such as might remain if the learner had actually visited and travelled over it.

## CHAPTER II.

### PHYSICAL GEOGRAPHY

20. The Earth is a great ball a little less than 8000 miles, or rather more than 500,000,000 inches in diameter. It is often said to be a sphere, but a sphere is a mathematical figure every point on the surface of which is equally distant from the centre. In the case of the Earth, however, the distance from either pole to the centre is 13 miles less than from the equator to the centre. Hence the form of our planet is more correctly spoken of as an oblate spheroid, that is, a flattened sphere-like body. But not only is it flattened at the poles, its equator is not a perfect circle with every point on it equidistant from the centre. Sumatra and Ecuador, for instance, are believed to be 1 mile nearer the centre of the Earth than the west coast of Africa or the central Pacific Ocean. Moreover, the surface of the Earth is covered with irregular elevations rising into continents and mountain ranges, and with depressions that sink to form the ocean basins. As all mathematical figures are perfectly smooth, it is therefore more accurate to call the shape of the Earth that of a ball than of a sphere or spheroid. Yet the form of our planet is so like a sphere that in any model small enough to be seen as a whole the irregularity could not be detected by the eye or touch, for the polar diameter is only  $\frac{1}{300}$ th shorter than the equatorial, while the highest mountain is only  $\frac{1}{1400}$ th of the Earth's diameter.

The circumference of the Earth at the equator is the longest distance that can be traversed on the planet in a direct line, and it measures a little less than 25,000 miles, or rather more than 40,000 kilometres.

**21. Natural Divisions of the Earth.**—The Earth is really composed of three distinct parts, lying on the whole one over another like the coats of an onion. First, there is the **lithosphere**, i.e. the *stony globe* or solid central mass which makes up most of it. If the lithosphere were an exact sphere it would measure very nearly 7916 miles in diameter. Then there is the liquid envelope forming the oceans, called as a whole the **hydrosphere**, which, if uniformly spread, would entirely cover the smoothed down lithosphere to a depth of 2 miles. Outside all there is a light layer of gas, the **atmosphere**, of which the depth, or height as it is usually called because we live at the bottom of it, cannot be exactly measured, but is calculated at 100 miles. The lithosphere is ridged up in some places and sunk down in others in such a way that the hydrosphere is all contained in the hollows, and leaves the heights dry. In this way the surface of the Earth under the atmosphere is divided into land and sea.

**22. The Earth's Surface.**—The whole surface of the Earth has an area of 197,000,000 square miles, of which only 55,000,000 are land, including in this estimate some parts of the antarctic regions that have never yet been explored. Thus it appears that fully 72 per cent of surface is covered by water, while only 28 per cent, or a little more than a quarter, is occupied by dry land. The variety of the land surface in different places is of such importance to the people living upon it, that the greater part of this book, like most books on geography, is devoted to the description of the land.

Great diversity is found in the height and form, or to use one word expressing both of these features, the *configuration* of the land, and similar differences also occur in the bed of the oceans. The heights of nearly all the great mountains and most of the inhabited lands of the world have been measured, and in recent years many thousand soundings have been made in all the oceans, especially near shore.

**23. Heights and Depths.**—The dry land, which occupies five-sixteenths of the surface, rises to an average height of 2000 feet above sea-level; that is to say, if all the mountains and high

plains were levelled down to the height of 2000 feet, the material quarried from them would fill all the valleys and cover all the low plains up to the same height. The oceans cover an area of about eleven-sixteenths of the whole surface of the planet, their average depth beneath sea-level is 16,000 feet or 3 miles, and the configuration of their floor seems to be more uniform than that of the land. The volume of water in the oceans is about fourteen times as great as the volume of land rising above the sea-level.

**24. Structure of the Land.**—The land consists of various kinds of rocks, most of which were formed out of sand, mud, or gravel transported from the land and spread out on the shallower parts of the sea-bed. Among these rocks are beds of limestone full of shells, corals, and other sea-creatures. It is thus evident that what is now dry land has formerly lain under the sea, and has been upraised into its present position. Other rocks have risen at various times in a molten state from the interior of the Earth, as still happens during eruptions of volcanoes. Hence we see that the materials of the dry land have gradually come to their present shape and position after many changes. The cool outer part of the lithosphere is called its *crust*. The interior, whether solid or liquid, must be intensely hot. But it is slowly cooling, and as a consequence of the loss of heat is gradually contracting in bulk. This contraction probably shows itself in the irregular wrinkling of the surface of the crust, the ridges rising into continents and chains of mountains, while the depressions form the basins of the oceans.

**25. Distribution of the Land.**—The lithosphere projects above the hydrosphere mainly in the northern half of the Earth. If a terrestrial globe be placed so that the south of England is uppermost, the eye looking directly down on it will see seven-eighths of the land at once, and only a third of the sea; this hemisphere, in fact, contains almost as much land as sea. At a distance of about a thousand miles from the north pole there is a ring of land broken by one very narrow opening, and by one much wider nearly opposite it. These two openings widen towards the south, the narrower into the vast Pacific

Ocean, the wider into the Atlantic, both of which extend southward to meet the great Southern Ocean. Thus the land of the Earth is divided into two vast islands; the greater one lying to the east of the Atlantic, and known as the *Old World*, the smaller lying to the west of the Atlantic, and called the *New World*.

Speaking generally, both the Old and the New World are widest at the north, and taper southward. The equator only crosses land for one-sixth of its course, and the parallel of  $57^{\circ}$  in the southern hemisphere touches no land at all. An irregular triangle with the apex pointing southward is the common form taken by the land of the globe, and is repeated again and again, on a great and on a small scale. From the northern cleft land-ring North America tapers south-south-eastward, forming at its southern extremity two narrow south-pointing peninsulas, between which an isthmus unites it to South America. The latter is also wide at the northern end, and tapers to a point at the south-south-east, the extreme tip forming a labyrinth of islands and rocky channels which project beyond  $55^{\circ}$  S. lat. The mass of the Old World runs south-eastward from the half of the northern land-ring east of the Atlantic, and terminates in several great triangles pointing to the south, Africa on the west, Asia and Australia on the east. Dry land does not extend between Asia and Australia, but the connection is shown by the islands of the Eastern Archipelago which rise from a great bank in the sea.

26. The plan of the Earth is thus a cleft circle of land round the north pole, with two arms reaching southward, opposite each other, embracing the globe. One arm consists of the two Americas, the other of Asia (the eastern and larger portion of Eurasia) and Australia. If this were all, there would be two narrowing continents dividing two widening oceans; but the great continent of Africa and Europe (the western and smaller part of Eurasia) form a thick third arm midway between them, pushing southward also, and quite unrepresented by land on the other side of the globe.

27. Similarities between the Continents.—Europe, the

western part of Eurasia, resembles North America on the opposite side of the Atlantic, Norway corresponding to Labrador, the Baltic Sea to Hudson Bay, Great Britain to Newfoundland, Spain to Florida, and the Mediterranean to the Caribbean Sea and Gulf of Mexico. The resemblance extends farther south, for Africa is like South America in form, having smooth coastlines without bays or peninsulas, and each traversed by two great rivers flowing into the Atlantic Basin. As Europe and Africa on the east and the Americas on the west run southward enclosing the Atlantic Ocean by similar coasts, so Africa and Australia, also with similar coasts, mark the limits of the Indian Ocean, Australia having the same relation to Asia that Africa has to Europe, or South America to North America. A group of large islands usually lies off the east coast of southern-pointing land, North America has the West Indies, South America has the Falkland Islands, Africa has Madagascar, India has Ceylon, Asia has the Eastern Archipelago, and Australia has New Zealand. This indicates the natural extension of the great land masses eastward as well as southward. Great Britain, Ireland, and Sicily are the only instances of large islands lying to the west of the nearest continental land. The southernmost points of the three great continental arms lie on a circle, and although the cause of this arrangement and spacing is quite unknown, it is interesting to note that Africa, South America, Australia, and Africa, going round the world in a westerly direction, are separated by distances in the ratio of 7, 8, and 9, as measured on this circle.

The coastlines of continents or islands are never straight, they are always flowing curves. This is particularly apparent in the shoreline of the Pacific and Indian Oceans, where the curves are parts of large circles.

28. The surface of the continents is very irregular, descending in one or two places below the level of the sea to form sunken plains or deep hollows; often extending in wide, low plains, or swelling up to form table lands or high plains, and less frequently rising abruptly into towering mountain masses, cut by narrow valleys. The line separating two slopes of land facing



in different directions is a *watershed*, from which streams flow down the opposite slopes to fall into distant seas. Great **mountain systems**, forming long ridges or masses of high land, are arranged in definite order, following as a rule the direction of the continent on which they stand. In the Old World the mountains form ranges, generally running east and west, though rarely in straight lines. From these the land slopes gently to the north in long, nearly level plains, and falls off abruptly towards the south in a short, steep descent.

The line of highest land is sometimes termed the **axis** of a continent, as it runs parallel to the line which divides the land longwise into two equal parts. The wide northern part of Africa resembles Eurasia in having mountain ranges which run east and west, but farther south the terraced high plains of the interior run more nearly north and south, and the mountain ranges follow the same direction. The western land-slope is the larger. America is distinguished by the north and south arrangement of its high lands and mountains. The chief ranges and watershed keep close to the west coast, with a very short and steep descent to the Pacific, and a long gradual slope to the Atlantic. Thus, besides the resemblance in outline between the opposite continental shores of the Atlantic, there is a common **dip** of the land towards this ocean on both sides, and it so happens that although the Atlantic contains only about one-fifth of the water surface it receives the rivers flowing from half the land surface of the globe.

**29. A drainage area** is a group of river basins draining into the same ocean or inland depression.

#### DRAINAGE AREAS.

To	Square miles.	Per cent land area.
Atlantic Ocean . . .	26,500,000	52
Pacific Ocean . . .	7,500,000	14
Indian Ocean . . .	6,500,000	12
Inland . . .	11,500,000	22

The inland drainage areas, amounting to nearly a quarter of the whole, are parts of the continents which dip down to a central

hollow with no outlet to the sea, sometimes indeed lying below sea-level. Great evaporation keeps the lakes from overflowing.

• **30. Rivers** are streams of fresh water usually formed by the union of a number of smaller streams, the *affluents* or *tributaries* of the main river. As a rule they flow from the mountains to the sea, and the course of a typical river is divided into three parts. The *torrential* part slopes steeply, the water rushing with great speed through a narrow, rocky channel cut in the hillside, and foaming over projecting rocks, in waterfalls and rapids. The *valley* portion of the course, with a more gentle slope, is usually the longest, the stream running quickly through a valley between steep banks or hills. Finally, in the *plain* part of the course, the river, having received all its tributaries, creeps sluggishly over nearly level ground to the sea.

The *torrential* parts of streams are subject to sudden and violent floods, sweeping down into the valleys, and frequently doing enormous damage on the plains. From a practical point of view, they are of value only in transporting timber from the mountain forests.

**Valley rivers** are frequently not too rapid to be navigable; vessels can ascend them when the slope is less than a foot in a mile. They often change their course from side to side of the valley, flowing close to one bank and leaving a wide, flat plain between them and the other. Towns which stood on the banks of a river at one time have been left many miles from the stream as it cut its way in another direction. Sometimes the stream cuts a deep, narrow, straight walled valley in a high plain; this is known as a *cañon*.

In the *plain* part of its course the river winds in a very characteristic way, forming wide loops, which are sometimes cut across, and leave islands in the stream. The fine mud and sand brought down through the valleys by the slackening current are here deposited, producing broad stretches of flat land, and raising the river bed above the level of the surrounding country.

In many cases one or other of the typical parts of the river-course may be wanting, as there are *torrential* streams falling

directly into the sea, and long rivers which wind on a plain for their whole course.

Rivers often hollow out underground channels for themselves, especially in limestone regions where the rock is dissolved away by the running water.

In mountainous countries the **glaciers** that creep down the valleys from the perennial snow of the summits give rise, where they melt, to full muddy rivers, rushing along the lower valleys, and usually flowing through deep lakes where most of the mud is deposited before reaching the sea. The rivers of inland drainage areas never reach the sea, some run into salt lakes, others evaporate as they flow, gradually dwindle away, and finally disappear. A **river basin** includes all the land, the streams from which unite to enter the sea by a common mouth. The bank of a river on the right hand of a person looking down stream is called the right, that on his left hand the left.

**31. Lakes.**—Collections of water in the hollows of the land are known as lakes. These are most numerous in the north temperate zone. If a circle, with a radius of 3000 miles, were drawn from a point between Greenland and Nova Zembla, it would pass through the chief lakes and inland seas of the northern hemisphere, cutting the great lakes of North America, the Mediterranean Sea between Europe and Africa, the Caspian, Lake Aral, Lake Balkash, and Lake Baikal in Asia.

**32. Deserts.**—In the north a ring of ice deserts, fringed with flat, monotonous *tundras*, on which only some coarse mosses grow, surrounds the Arctic Sea. Nearly in the tropics a girdle of hot *sand-deserts*, some flat, others mountainous, but all bare and dry, surrounds the world, extending from the Atlantic coast of Africa, as the Sahara eastward across that continent, through Arabia and Central Asia, rising to the vast high plains of Tibet, and down through the Gobi to China, appearing again in the Great Basin of the United States. A broken ring of south tropical deserts is represented by the *Kalahari* in South Africa, and by the interior of Australia.

**33. Volcanoes.**—A more striking line is the ring of volcanoes, —the *Fiery Circle*, as it has been called—which hemms round the

margin of the Pacific, and includes most, though by no means all, known volcanoes. Mountains which pour out streams of white-hot glowing lava (melted rock), or which have done so at some not distant time, occur all along the Andes, from Cape Horn to Mexico, and at intervals along the western ranges of North America, through Alaska, across to Asia by the chain of the Aleutian Islands, along the Kuriles, and throughout the islands of Japan, the Philippine Islands, and the Eastern Archipelago to New Zealand, and finally through the isolated volcanic groups of the Pacific towards South America again.

These circles are real, natural facts, and worth noting, because they show some sort of plan in the relation between land and water on the Earth's surface, linking together special features, the place of which might not be easily remembered in any other way.

**34. Definitions.**—Special names are given to different forms of the land, and it is necessary to be quite sure of the exact meaning of them. A few of the most important of these geographical terms have been already explained, some others are as follows :—

*An Island* is a portion of land entirely surrounded by water.

*An Archipelago* is a group of islands ; if an archipelago were upheaved a few hundred feet it would usually form a single, large, mountainous island or peninsula.

*A Peninsula* is a piece of land almost surrounded by water.

There are two classes of peninsulas, isthmal peninsulas like the Morea or South America, and partial peninsulas like Italy or India. The extremity of a small partial peninsula is called a *cape*, or if the land composing it is high, a *headland*. The largest peninsulas (North America, South America, Africa) and the greatest islands (Eurasia, Australia) are termed *continents*.

*An Isthmus* is a neck of land joining an isthmal peninsula to other land.

*A Sunk Plain* is a comparatively level portion of the land below sea-level.

*A Low Plain* is a flat or undulating stretch of land not more than 600 feet above the sea in any part.

A *High Plain*, plateau, or table-land is a flat, undulated, or broken stretch of land more than 600 feet above the sea.

A *Hill* is a more or less abrupt elevation of the Earth's surface, in the form of a peak or ridge not more than 1500 feet above a *plain*.

A *Mountain* is an eminence or abrupt elevation rising to more than 1500 feet above a plain.

A *Range* is a succession of hills or mountains not broken by wide valleys.

A *Valley* is a hollow or cleft between hills, or in a plain.

TABLE OF THE CONTINENTS.

Name.	Area. Million sq. miles.	Average height Feet.	Highest point. Feet.	Coastline. Miles.	Ratio of area to coast.
Asia . . .	16.4	3,000	29,000	36,000	472
Africa . . .	11.1	2,000	18,800	12,500	920
North America . . .	7.6	1,900	19,500	30,000	283
South America . . .	6.8	2,000	22,800	16,000	406
Europe . . .	3.7	940	18,500	26,000	143
Australia . . .	3.0	800	7,200	9,000	333
Antarctica . . .	Une				

**35. THE HYDROSPHERE.**—No one has ever seen the parts of the Earth's crust which are under water, but a great deal has been found out, by sounding and dredging, about the depth of the sea and the character of its bottom. From the edge of the land the sea-floor slopes towards the great depressions of the lithosphere, for the most part abruptly. But where the great waves of the open sea have beaten on the upper edge of this steep slope for ages, they have carved out a broad undulating plain known as the *Continental Shelf*. This shelf is very wide in the north-west of Europe, and the British Islands stand upon it; it almost unites the continent of Asia with Australia, and connects the Falkland Islands with South America. In other parts of the world the continental shelf is narrow, while round a few oceanic islands, which have been upheaved comparatively recently, there is as yet none at all. The seaward margin of this shelf is about 100 fathoms below the surface of the sea. Outside of the contour line of 100 fathoms the sea-floor descends rapidly into the abysses. It is difficult for sailors to find the

depth quickly when the water is more than 100 fathoms deep, so that if this depth occurred close to the shore, a vessel coming in from a sea voyage in a fog could scarcely get warning by soundings before the ship would strike the rocks. But as things are, when the 100-fathom sounding line does not reach the bottom, the captain knows that he is far from shore and safe. As soon as the lead does touch at 100 fathoms, he knows that he is nearing the land, but that the depth of the sea will now diminish very slowly, so that he can feel his way towards the shore even in thick darkness, and stop in time whenever the sounding line warns him that the water is getting too shallow for his ship. There are hollows and ridges on the shelf just as on the low plains of continents. The ridges either rise above the surface forming rocks or islands, or they do not reach quite so high, and are called *shoals* or *banks*.

Waves wear away the softer rocks of the land most rapidly, and the harder masses are thus often left as islands. These and portions of land separated from continents, by subsidence of the surface of the lithosphere, are termed *continental islands*. Their original connection with the continent from which they have been detached is proved by the kind of rocks which compose them. Thus it is known that the Falkland Islands were once part of South America, and the Hebrides part of the continent of Europe.

A *Bay* or bight is a wide recess in the coastline of the land.

A *Gulf* is a recess in the coastline, narrow in proportion to its length.

An *Incurve* is a sweeping recess of the coastline, larger and more gentle in its outline than a bay or gulf. It is the opposite of an *Outcurve* or gently projecting part of the land.

**36. Low Coasts.**—The coast of a continent or continental island is sometimes a low flat stretch of sand which may be piled up by the wind into dunes or hillocks. It is sometimes a plain of shingle raised in rolling ridges along the shore. On such low shores, rivers and coast streams often change their entrances into the sea, especially when sudden floods or violent storms tear down their loose banks. Long bars and narrow lagoons or pools may then be seen intervening between land and sea.

The bar at the mouth of swift navigable rivers is a ridge of sand or shingle, dropped by the stream when its current slackens, and shifted to and fro by the tides. Most of the rivers of flat countries flow so slowly that they carry only fine mud, which settles gradually. When these muddy streams pour into a sea where strong tidal currents run, they form shifting mud-banks and flats like those of the Thames. Many of the greatest rivers pour into enclosed seas where there is little or no tide. Their sediment when dropped meets no currents to sweep it to right and left along the shore, and so accumulates opposite the river mouth, and in time rises to the surface. Thus a delta grows out, and gradually builds up more and more of the sea-floor into land. The delta was called by old writers the gift of the river to the land. It is really more like a returned theft, for every particle of mud laid down as the fresh water mingles with the sea, was broken by the impetuous river or its tributaries from some far off inland mountain slope, or swept as soil from the fields of the valley and plain, and worn and pounded into mud on the long journey to the coast. The mud-banks of low, tropical shores are covered with a particularly luxuriant growth of strange, semi-aquatic trees (mangroves) standing up on tall, stilt-like roots—a forest advancing into the waves. This contrasts with the dry sand coasts where the ocean seems to meet another sea of sand, rippled by the winds, and furrowed into dunes like waves, on which only a few wire-like grasses and dry prickly cactus plants can live.

**37. High Coasts.**—In other places the coast is a line of steep cliffs against which the waves rise and fall, hollowing the softer rocks into caves and little bays, and carving the harder into bold projecting headlands. A narrow beach of shingle or sand, but never of mud, is formed at the base of cliffs. On such coasts rivers usually enter by an inlet which may be named a bay, a creek, or firth, where the river-water mixes gradually with that of the sea, the sediment carried down by the stream being spread evenly over the bottom, often not even forming a bar.

The lofty cliffs of rocky coasts, formed by a high plain or mountainous table-land coming right up to the shore, are often

cut by narrow winding arms of the sea extending many miles inland, and branching out among the valleys. Such are the sea-lochs of Scotland and the fjords of Norway. They are generally comparatively shallow at the entrance, and deepen farther up, till in some cases they reach a greater depth than any part of the neighbouring continental shelf. The water at the bottom is always cold, for the summer's heat which warms the surface water takes several months to make itself felt below; and there is so little mixture with the sea outside, that kinds of animals are found in some fjords which live nowhere else in the neighbourhood.

**38. Seas.**—The smaller more or less enclosed portions of the hydrosphere are called seas. Some shallow ones, such as the North Sea, lie entirely on the continental shelf, others, like the Black Sea, the Mediterranean, the Red Sea, and the Baltic are almost surrounded by continental land, and the rest are, as a rule, marked off sharply from the ocean basins by curved lines of islands crowning ridges of the ocean bed. An **Inland Sea** is a great body of sea-water entirely cut off from the ocean; the Caspian is the only example. **Enclosed Seas** communicate with the water surface of the globe through one channel, narrow in proportion to the breadth of the sea, and usually called a strait. They are always shallow where they join the ocean or larger sea, and deepest at some point inside. The water in these seas is kept in circulation partly by wind currents, but mainly in two other ways. In cool seas, such as the Black Sea and the Baltic, into which many great rivers flow, the water is always nearly fresh, and therefore lighter than the sea-water outside. It consequently flows out as a surface current, while at the same time a steady stream of saltier water flows in beneath. These seas are thus prevented from becoming quite fresh. In hot seas, like the Red Sea and the Mediterranean, the very reverse happens. Evaporation is so great that more water rises as vapour from the surface than is brought in by rivers. Consequently the water sinks as it gets saltier and denser, and flows out as a slow undercurrent, while the fresher ocean-water streams in above it. **Partially-enclosed Seas** communicate with the ocean by two



or more openings, and, as a rule, strong tidal or oceanic currents sweep through them. They usually occur amongst large island groups and along the shores of continents, for instance along the east coast of Asia. In some rare cases the boundaries of partially-enclosed seas are entirely below the surface of the water, the Norwegian Sea between Norway and Greenland is one of this kind; a ridge running from Scotland to Iceland, far below the surface, keeps its cold arctic water from mingling freely with the warmer water of the Atlantic.

The following table, intended only for reference, and not to be learned off by the scholar, gives a list of the chief seas. It is interesting to notice how many of these have colour names:—

Sea.	Area in sq miles.	Greatest depth in fathoms.	Remarks.
Arctic †	4,480,000	1,500	Always filled with ice.
Mediterranean*	813,000	2,150	* Enclosed Sea.
North Sea †	162,600	360	† Partially-enclosed Sea.
Baltic Sea*	195,500	430	Filled with ice in winter.
Black Sea*	139,350	1,070	Margin frozen in winter.
White Sea*	47,000	189	Filled with ice in winter.
Red Sea*	158,750	1,200	Hottest and saltiest Sea.
Persian Gulf*	77,450	50	
Sea of Japan †	375,550	1,200	
Yellow Sea †	468,450	600	
Sea of Okhotsk†	542,000	700	Filled with ice in winter.
China Sea †	1,366,600	2,200	
Colebes Sea †	181,950	2,745	In Eastern Archipelago.
Banda Sea †	422,000	4,200	
Java Sea †	360,050	550	
Sulu Sea †	171,200	2,200	
Arafura Sea†	565,200	1,200	
Hudson Bay*	300,000	200	Filled with ice in winter.
Gulf of Mexico†	716,200	2,119	
Caribbean Sea†	1,161,400	3,169	
Caspian Sea	170,000	500	Inland Sea.

**39. Abyssmal Region.**—The knowledge of the deeper or abyssmal portion of the hydrosphere is quite new, and chiefly resulted from the famous cruise of the *Challenger*, a British man-of-war which made a voyage of discovery round the world between 1872 and 1876. Since then a number of surveying

ships, in the course of making charts, and many telegraph ships, while laying cables between the various continents, have made deep soundings, sometimes requiring 5 miles of fine wire in order to reach the bottom. We now know that the whole abysmal region lies at an average depth of 3 miles—that none of it is so little as 1 mile from the surface, and that its floor stretches out in an undulating succession of plains and hollows. If the general level of the sea surface could be lowered 1 nautical mile, so that the abysmal region alone would be sea, while the shallower parts and the continents would be land, one vast three-armed continent would be seen to stretch from the north containing a few inland seas, and one great three-armed abysmal ocean of the same size would stretch northward from Antarctica, broken only by the oceanic islands. The Abysmal Area forms three great depressions in which the depth of water exceeds 2000 fathoms. These run from north to south, and form the basins of the Atlantic, the Indian, and the Pacific Oceans respectively, extending in all cases to the south of 50° S.

The surface of the hydrosphere has been divided for convenience into four great oceans which do not quite correspond with the natural depressions and ridges, and include the various seas that have already been mentioned.

40. The Southern Ocean, with an area of 30,000,000 square miles, stretches from the ice hidden shores of Antarctica northward as a continuous ring, encircling the world to 40° S., and there joins the three great gulfs, each called an ocean, which run northward between the continents. It washes the southern extremity of America and New Zealand, surrounds Tasmania, but does not reach so far as the Cape of Good Hope. Except opposite the southern end of Africa, and there rarely, antarctic icebergs never find their way beyond the limits of this ocean.

41. The Pacific Ocean lies to the north of 40° S. Its boundary runs from the middle of Bass Strait, south of Australia, along the east and north coasts of that continent across to the eastern extremity of Timor, and along the eastern side of the line of the Sunda Islands to Singapore, the coast of Asia completing the western boundary. The arctic circle at Bering

Strait marks it off from the Arctic Sea on the north, and on the east the west coast of the two Americas is the boundary to 40° S. The area of this ocean is 55,000,000 square miles—as large as all the dry land of the Earth.

This vast area has been little explored, but it seems to contain one great depression or ocean basin extending on the south far into the Southern Ocean, and traversed by rises (long narrow tracts of the sea-bed rising near the surface) and deeps (unusually deep hollows). The 2000 fathom-line bounding the great depression runs from near Cape Horn to Tasmania, but a broad rise runs northward, curving westward parallel to the Australian and Asiatic shores, and not very distant from them. This unites Antarctica with eastern Asia by a ridge averaging about 1500 fathoms from the surface, with deeper water on both sides, and emerging above sea-level in the islands of New Zealand, New Caledonia, the Solomon group, the Carolines, Ladrões, and Japan. Just outside of the northern extremity of this rise there is a vast crescent-shaped depression, the *Tuscarora Deep*, named after the United States vessel which surveyed it; and on the landward side of this deep, close to the Kurile Islands, there runs a great trough more than 1000 miles long and about 20 miles wide, where the depth is greater than 4000 fathoms, and in this one sounding of 5000 fathoms, or 5½ miles, has been obtained. This is the deepest hollow known in the substance of the lithosphere.

42. The *Atlantic Ocean* is a comparatively narrow band of water running northward between Africa and Europe on one side, and the nearly parallel shores of America on the other, to unite the Southern Ocean with the Pacific. It terminates in the Arctic Sea, which is bounded in a ring by the two northern continents, and communicates by a narrow channel—Bering Strait—with the Pacific. The total area of the Atlantic is 33,000,000 square miles. It is the busiest commercial ocean, bordered in the north by the highest civilisation of the world's history, and is the ocean most abounding in inland seas, peninsulas, and the entrances of great rivers. The Atlantic Basin is the longest of all oceanic depressions, for it stretches far into the Southern

Ocean—within the antarctic circle—and runs northward as far as  $55^{\circ}$  N. It is divided into two parts by a narrow rise swelling up to about 1500 fathoms from the surface, and running northward along the middle from the southern limit of the ocean ( $40^{\circ}$  S.) near the volcanic island of Tristan d'Acunha, bending towards the west just north of the island of Ascension, which rises from it. Again curving towards the north-east at the equator, and touching the surface in the island group of the Azores, it finally spreads out in the latitude of the British Islands to connect Europe with America by a broad plain averaging 1500 fathoms beneath the surface. On both sides of this ridge there are areas of much greater depth, in one of which, called **International Deep**, just north of the island of Puerto Rico in the West Indies, the deepest water in the Atlantic, 4560 fathoms, is found. This vast pit has a very small area, and lies exactly in  $20^{\circ}$  N. lat.

43. The **Indian Ocean** is bounded by the south-west and north-west coasts of Australia, and the western side of the Sunda Islands on the east; on the north by the south coast of Asia, the wide peninsula of India dividing it into two gulfs called the Arabian Sea and Bay of Bengal. On the west the east coast of Africa is the boundary as far as Cape Agulhas, the southernmost point, whence a line due south to the parallel of  $40^{\circ}$  completes the circuit. This ocean, with an area of 17,000,000 square miles, shows the changes of climate due to the closeness of great continents in a remarkable way, and is particularly the region of monsoon winds and cyclone storms.

The basin or depression of this ocean extends, like that of the others, into the Southern Ocean, but closely follows the outline of the continental shores in its northern part. It includes a depression just south of Australia, extending southward to lat.  $60^{\circ}$  S., whence the southern limit runs north-westward to near the southern extremity of Africa. A chain of banks crosses the depression from Madagascar to India, but there is no long submarine rise like that of the Atlantic, and there are no very deep hollows.

44. **Sea-Level.**—The water which fills the oceans would form a spheroidal shell if the lithosphere were free from elevations.

and depressions and of uniform density. The surface of this unbroken world-ocean would be a true sea-level. In reality, however, the term sea-level means a very uncertain thing. The great projecting masses of the lithosphere attract and heap up the water against the land, drawing it away from the places in mid-ocean. In consequence of the attraction of the continental mass, crowned by the Andes, the sea-level on the coast of Chile is supposed to be 2000 feet farther from the centre of the Earth than sea-level at the Sandwich Islands; and it is known that in the Bay of Bengal the neighbouring mass of the Himalayas raises the sea surface about 300 feet above its level at Cape Comorin. In spite of these differences the sea is practically level as far as ships are concerned, for they are steadily attracted in the same way. Since the sea-level on the shore is the standard from which heights and depths are measured, it is evident that the heights and depths marked on maps may be several hundred feet wrong if estimated by their distance from the Earth's centre.

There are small differences in level between some neighbouring seas caused by greater rainfall, or evaporation, or the action of wind blowing for a long time in one direction, and these, although never exceeding a few feet in amount, give rise to strong currents.

**45. Salts in the Sea.**—Ocean water contains salts of several kinds dissolved, the amount being on the average  $3\frac{1}{2}$  per cent of its weight—that is to say, 100 lbs. weight of sea-water if evaporated would leave  $3\frac{1}{2}$  lbs. of salts. Common salt (sodium chloride) is by far the most abundant of these salts, but the bitter taste of sea-water is given by a smaller quantity of Epsom salts (magnesium sulphate), and there are also sulphate and carbonate of lime, with minute traces of almost everything that can be dissolved in water. Near the mouths of great rivers, and on the borders of the arctic and antarctic ice-barriers, and in the equatorial belts of constant rain, the sea on the surface, and near it, is much fresher than the average. On the other hand, in the regions of tropical sun and dry wind which occur about 20° N. and S. lat., there are great expanses in the three oceans where the saltiness is much above the average; but hot enclosed seas are saltier than any other part of the hydrosphere.

46. The Temperature of ocean-water varies greatly on the surface. In the far north and south, where the sea freezes over by reason of the intense cold, it may be as low as  $28^{\circ}$  F., the freezing-point of sea-water; while in the tropics, especially near continental shores, it may rise to as much as  $95^{\circ}$ , or occasionally higher. Beneath the surface the water always grows cooler, as a rule so rapidly that at a depth of 600 fathoms (or three-quarters of a mile) the temperature is less than  $45^{\circ}$  even at the equator. At the bottom the water is everywhere cold, varying only from about  $30^{\circ}$  to  $36^{\circ}$ .

47. Currents.—Besides wave motion, the steady winds of the world produce currents driving the surface water before them, but in this the differing density of the water brought about by changes in saltness and temperature are important aids. The direction of currents is fixed at first by the direction of the wind, but is changed by the arrangement of the land on which the currents strike, and by the rotation of the Earth. Professor Ferrel, an American meteorologist, gave a simple statement of this action which should be learnt and remembered:—

**FERREL'S LAW.**—*In whatever direction a body moves on the surface of the Earth, there is a force arising from the Earth's rotation which deflects it to the right in the northern hemisphere, but toward the left in the southern.* This law holds for moving air, and to some extent for rivers on land, as well as for currents of the sea.

There are two main sets of surface ocean currents, called after the place of their origin the *Equatorial* and the *Polar*, but these are parts of one great system of oceanic circulation.

48. Equatorial Currents.—In each of the three oceans a strong current flows from east to west nearly along the equator; by Ferrel's law we see that the tendency is for the northern part of this current to turn towards the north, and for the southern part to turn towards the south. The flow of the land against which the currents flow helps this turning, and the stream sets towards the south along the coasts of the southern continents, and towards the north along the northern, and still turning in obedience to the law flows back toward the east. These tropical currents are

composed of warm surface water, and as they always flow from the tropics this is one of the reasons why the surface layer of warm water is thinner in the tropics than in higher north latitudes. In the three branch oceans there is, as a rule, a motion of the water north of the equator as if the ocean were whirling in the same direction as the hands of a watch, and south of the equator, as if it were whirling in the opposite direction. These currents greatly affect the climate of the lands they surround.

Part of the north-westerly Atlantic equatorial current enters the Caribbean Sea and Gulf of Mexico by the opening between Yucatan and Cuba, and flows out through the opening between Cuba and Florida, as the **Gulf Stream**—a river of warm deep-blue water 40 miles wide and 2400 feet deep, joining the main mass of the equatorial current and streaming northward along the North American coast. It continues, gradually turning to the right, or towards the east as it flows, and spreads out until it reaches the British Islands and Norway as a scarcely perceptible drift of water carried along by the south-west winds. The result is that this portion of Europe is the warmest region of the world in so high a latitude. In the Pacific another such current, the **Kuro Siwo** (Chinese for *Black Stream*, named from its dark colour), flows amongst the Philippine Islands, and curving past Japan crosses the ocean north-westward towards British Columbia, but its effects are less marked than those of the Gulf Stream, as the distance the warm water is carried is much greater.

**49. Polar Currents.**—The arctic currents are small streams of very cold water creeping along the eastern coasts of America and Asia, the climate of which they help to keep cold and severe in winter, and by meeting and mingling with the warmer currents they give rise to fogs along the shore all the year round. The icy **Labrador current**, flowing past Newfoundland as the *Cold Wall* between the Gulf Stream and the coast of the United States, is the most important.

The antarctic currents form the great feature of the Southern Ocean, streaming on the whole north-eastward right round the world, and merging into a general easterly drift urged by the steady west winds of the region. These cold currents strike the

coasts of South America, Africa, and Australia, and run northward, growing warmer as they flow, and finally joining the equatorial system. They affect the climate greatly, and help to make the west coasts of the southern continents far cooler than the east coasts in the same latitude.

In addition to this system of surface circulation, and probably on account of it, there is a steady but extremely slow movement of the whole mass of abysmal water northward from the Southern Ocean on every side.

**50. Tides.**—The fact that the hydrosphere is not rigid, and that it is nearer the moon and sun than the main mass of the lithosphere, produces tides. If the lithosphere were free from ridges or hollows, the hydrosphere would have an ellipsoidal shape, independent of the effect of rotation, being thinned down near the poles and heaped up about the equator, especially just opposite the moon, and as the Earth rotated, a great tidal wave would appear to follow the moon from east to west. But the manner in which the land projects above the hydrosphere destroys this simplicity. The tides in mid-ocean are indeed only a very slight heaping up under the moon converted into a rapidly moving wave by the rotating earth without any current to speak of, but in shallow water, and especially in narrow channels, or bays and estuaries, the rise is very great, often over 50 feet, and the tidal wave becomes a rapid current. Where the stream of the tide forces its way through rocky channels separating continental islands, it gives rise to whirlpools and races, through which even powerful steamers sometimes cannot force their way in the calmest weather. Enclosed seas are shut out from the tidal waves of the ocean, and although the moon and sun raise tides in every stretch of water, however small and completely enclosed, these are of small range, being measured by inches rather than by feet.

By the regular rise of water to a height of from 5 to 20 feet above its average level, most of the rivers of the North Sea, although small and shallow in themselves, can be entered by large ships, and so form admirable seaports. If the North Sea were tideless like the Baltic, London would be an inland town far out



of the reach of shipping. Tidal rivers are increased in depth by the tide at regular intervals of a little over twelve hours ; but when they traverse a nearly level country, little raised above the sea, the ebb-tide, caused by the sinking of the tidal wave in the ocean, quickens their flow, while the flood-tide or rise of water resulting from the swelling up of the ocean tide-wave checks and reverses their current sometimes for many miles. This periodical upward flow is taken advantage of on the Thames to an enormous extent, crowds of laden barges being floated confusedly up the river to London without any expense.

**51. THE ATMOSPHERE.**—The atmosphere is an ocean of gas surrounding the whole Earth and covering the highest mountains. The pressure of its own weight makes the lower layers very dense compared with the upper parts, and it is in this dense region of the atmosphere that mankind and all land animals live, moving about through it on the surface of the Earth as crabs and starfishes do through the water on the bottom of the sea. On mountains more than 15,000 feet high men unaccustomed to the place find it difficult to breathe, and strangers crossing the high passes of the Andes and Himalayas, or visiting the lofty towns of South America, suffer greatly on account of the small density of the atmosphere. Although the atmosphere is so high (§ 21), fully one-half of its mass is compressed within  $3\frac{1}{2}$  miles of the Earth's surface. Geography, which deals mainly with the form of the land and the surface motion of the sea, takes account only of the motions of the lower layers of the atmosphere, and of the variations of pressure in different parts of the globe. As water flows from a higher to a lower level, so air flows from a higher to a lower pressure ; the current of air is called wind. Anything that changes the density of the atmosphere makes the pressure greater in one place than in another, and produces wind ; heat and water-vapour are the chief agents acting in this way. Wind, like ocean currents, flows in a curved path (§ 47) from regions of high to those of low pressure. Thus in the northern hemisphere the air moving from a permanent area of high pressure about the tropic of Cancer towards a low pressure region near the north pole appears as wind blowing

towards the north-east, and is named from the direction whence it comes a south-west wind.

**52. Steady Winds.**—The winds of the world are regular on the average, although many things, such as the arrangement of land and water and the season of the year, give rise to changes in special places at particular times. On the whole the general results are better seen at sea than on land. A double girdle of air at a comparatively high pressure (the barometer standing at about 30·2 inches) always encircles the world in the neighbourhood of the tropics, divided by a narrow belt at low pressure running nearly along the equator. Two larger areas of permanently low pressure occur near the poles, one within the arctic and one within the antarctic circle. The resulting steady winds blow in the directions indicated by Ferrel's law (§ 47). South-west winds are always blowing from the north tropical high pressure to the arctic low pressure area; north-east winds are always blowing from the north tropical high pressure to the equatorial low pressure; south-east winds from the south tropical high pressure area; and north-west or westerly winds from the latter towards the antarctic low pressure. To maintain the steady distribution of pressure in the atmosphere and keep up these permanent winds, return currents flow in the upper regions of the air opposite to each of the prevailing surface winds.

The prevailing winds blow with different degrees of regularity according to the amount of disturbance in pressure caused by neighbouring land. Those blowing towards the equator from the tropical high pressure areas, situated in about 30° N. and S. lat. respectively, can be trusted so thoroughly in navigation that they have been named the **trade winds**—the North-east Trade always blows north of the equator, and the South-east Trade south of it. In the low pressure belt between the two there is a zone of calm weather, where the heat is great and the air falls constantly. The westerly winds south of lat. 40° S. are also very regular, blowing strongly always in the one direction, and driving a rough sea before them. Sailors call these the *Brave West Winds*, and the latitudes in which they blow, from 40° to 50° S., the *Roaring Forties*. Sailing ships from Britain to New Zealand take advan-

tage of these in making the voyage out by the Cape of Good Hope, and in returning continue to run before the same steady gale on their homeward passage round Cape Horn.

**53. Local Winds.**—The trade winds off the shores of continents are obscured by temporary winds; one kind produced by the change of temperature between day and night, another by the change between summer and winter. When the air is heated by the sun or by the hot ground, it expands, rises upwards, and the pressure being lowered a wind blows towards it. Thus through the day when the land gets hotter than the sea, a steady **sea-breeze** blows towards the shore; and at night when, by radiation, the land cools down and the sea remains warmer, a steady **land-breeze** blows outwards from the coast. During summer also the surface of great continents grows hotter than that of the neighbouring oceans, and the pressure consequently remains lower over the land for half the year, drawing in strong winds from the sea. In winter, on the other hand, the continents are colder and the pressure of the air is higher over the land than over the sea, hence steady winds blow from the land for about six months of the year. Such winds are called **monsoons**.

**54. Storms.**—Temporary areas of low pressure known as **cyclones** sometimes form and pass along in a curved path over land or sea, causing wind and rain. Small cyclones moving comparatively slowly give rise to the storms known in different places by the names *typhoon*, *hurricane*, or *tornado*. These are cyclones in an intensified form; the tremendous blasts of wind and deluges of rain which they carry over the land sweep out a clear path through forests or towns, uprooting trees and unroofing houses. At sea they raise huge waves, which frequently wreck ships that are unfortunate enough to be overtaken; but captains who understand the law of storms and watch their barometers usually manage to escape the worst of them.

**55. Rainfall.**—The distribution of rainfall depends on the wind and on the configuration of the land. It is least in the interior of continents and in the sheltered slopes of mountains; greatest where a steep wall of land, either a mountain range or

the edge of a high plain, fronts prevailing winds which carry vapour inland from the surface of a warm sea. Thus, for instance, the trade winds crossing the wide low plains of the Amazon laden with moisture brought from the tropical Atlantic, produce a heavy rainfall when cooled by blowing up the cold eastern slopes of the northern Andes, which stop their progress, and rain is almost unknown on the western slope. The southern Andes, however, come within the region of the *brave west winds* which dash continual showers against their steep westward front, and descending from the crest of the mountain range, sweep over the eastward plains drained of their moisture.

The eastern shore of the Indian Ocean is the rainiest part of the world, the south-west monsoon in summer bringing deluges of rain to the mountains of India and of the Eastern Archipelago, where as much often falls in a summer day as reaches the land in a whole year in England.

**56. Warmth of the Air.**—The temperature of the atmosphere is greatest between the tropics, and least within the polar circles. But the arrangement of land and water in the northern hemisphere, the direction of the prevailing winds and of the great ocean currents, disturb this astronomical division of climates (§ 14). Some sea-coast places in high latitudes have a mild and temperate atmosphere all the year round, while others in lower latitudes have winters of great severity, although the summers may be intensely hot. Thus on one side of the Atlantic the Gulf Stream and the south-west winds produced by the northern area of low pressure keep the coast of Norway free from ice all the year round as far as  $70^{\circ}$  N., while the cold arctic current and the north-easterly winds produced by the same area of low pressure keep the coast of America ice-bound for months as far south as Nova Scotia in lat.  $42^{\circ}$  N.

The air on mountains is colder than at sea-level, and for every 300 feet of ascent there is a cooling by  $1^{\circ}$  F., so that on a mountain top 3000 feet high the air is always  $10^{\circ}$  colder than at the base. At a certain height in any latitude it is thus so cold that snow does not melt in summer; and even on the equator mountains are always white with snow above the level of 16,000

feet. The lowest limit at which snow lies permanently on a mountain slope is called the *snow-line*.

**57. Climates.**—As the heating effect of the sun by day and the cooling effect of radiation on clear nights is far greater on land than at sea, and most intense in air containing little water-vapour, the centre of a continent is far colder in winter and far hotter in summer than that of a place in the same latitude on the coast. For instance, the total rainfall for the year at Moscow is about 12 inches, and in winter the rivers remain frozen for at least four months; while at Glasgow, in almost the same latitude, and therefore with exactly the same amount of daylight and sun-heat, the annual rainfall is 40 inches, and a whole week's skating is a very rare occurrence; but the average summer temperature is about 10° lower than that of the Russian town.

On this account climates have been classified in two groups: (1) **Insular**, in which the neighbourhood of the sea gives a considerable rainfall, mild winters, cool summers, and a sky usually cloudy and charged with water-vapour; and (2) **Continental**, where there is nothing to mitigate the bitter cold of winter or the intense heat of summer, where little rain falls and the air is dry and clear at all times. These differences have important bearings on the life of the people, the nature of industries, and on trade, as later chapters will show.

## CHAPTER III

### DISTRIBUTION OF LIVING CREATURES

**58. PLANT LIFE.**—Geography is concerned with the distribution of living creatures over the Earth's surface, that is, with the places where particular kinds of plants and animals are to be found. In most lands what first meets the eye is not the solid crust of the lithosphere but the plant-covering—coarse hairy mosses and shaggy heaths, struggling amidst stones and peat in the moors of the far north; smooth expanses of bright green flower-starred grass or dark pine forests rising along the high hill-sides, in temperate places; dense broad-leaved forest trees in wet, equatorial regions, matted together with creepers and brushwood. The nature of this plant-covering depends mainly on the soil formed by the breaking down of the rocks, on the moisture carried by the winds of the atmosphere, on the warmth, and on the amount of sunlight reaching the land. In some places, however, the soil and climate would be quite suitable for plants which do not grow there. For instance, the rich prairie lands of North America lay for ages perfectly ready to produce great corn crops, but it is only within the last few years that grain has been sown in them, and they have borne rich harvests of wheat.

**59. Tropical Vegetation.**—The power of the land to support luxuriant and varied vegetation diminishes from the tropics towards the poles. In tropical regions of great rainfall, such as the basins of the Amazon and of the Congo, and the Malay peninsula and archipelago, the densest and most varied forests of the world occur. All the trees grow continuously all the year round,

the broad soft leaves are evergreen, the colours and odours of the flowers are brilliant and rich.

Beyond reach of heavy rain tropical forests are less dense, the trees stand well apart, and the ground being usually dry on the surface, does not support a thick growth of brushwood. In some parts of this region, and far beyond the tropics, in the centre of great continents, where the rainy season is very short and the dry season intensely hot, all the surface plants are withered up in summer, and even trees, which send their roots deep into the soil, cannot live. These plains of parched grass or bare earth are called *llanos* or *pampas* in South America, and *steppes* in Russia and Asia. **Steppe-lands**, as they may be called, generally alike in character, though a little different in vegetation from those of America, surround the great tropical deserts of Africa, Asia, and Australia. The rainy season changes the steppe-lands into lakes or marshes, and as the moisture soaks in or evaporates away, the ground bursts into a sea of grass and a blaze of flowers, chiefly of the lily kind, whose bulbous roots can keep alive in the hot dry earth. The tropical steppe-lands have only the two seasons, but those of higher latitudes are covered deeply with snow in winter, thus assuming a desert aspect once more.

**60. Temperate Vegetation.**—Beyond the tropics, where the winter is much cooler than the summer, the soft-leaved trees are deciduous—that is to say, they lose their leaves in autumn, and cease to grow in winter. Even where the rainfall is slight, if it occurs chiefly during spring and summer, when the new leaves are at work, great open forests flourish on the low plains and hill-slopes, and the oak, beech, ash, elm, and similar trees come to perfection. In the colder zones of the far north and south the sombre evergreen pines are the characteristic plants; their small, hard, needle-like leaves not being hurt by moderate frosts and snows. In higher latitudes still, only plants which remain covered by snow all winter, and so escape the terrible severity of the climate, can survive. On the **tundras** which surround the northern ice deserts, the soil thaws on the surface for a few months in summer, and there little shrubs or trees dwarfed down to a few inches in height, and low plants, chiefly of the heath

kind, bearing small, bright, star-like flowers, occur amongst mosses and lichens.

The same differences that occur in the distribution of plants in latitude are found on ascending a lofty mountain. For instance, at the base of the Andes there is tropical vegetation, half-way up trees of the temperate zone grow, and at the top arctic desolation prevails.

**61. Cultivation.**—Some plants have been changed and improved for human use by being planted generation after generation in the richest soil, watered and tended so as to have every chance of growing to great size and of bearing seed abundantly. This process of cultivation has, for instance, produced the cereals (rice, wheat, barley, oats, rye, etc.) from wild grasses. Much of the original vegetation of all settled and even partially civilised countries has been rooted up and destroyed to make room for better crops, and the soil has been made fit for these by being drained if wet and stiff, or watered by artificial canals if dry and parched.

**62. ANIMAL LIFE.**—The conditions necessary for strong animal life on land are plenty food, a warm climate, and means of defence. Thus the tangled tropical forests, with vegetable food ready in infinite variety all the year round, are inhabited by most various and numerous tribes of animals, some feeding on plants, others on the smaller animals which are plant-feeders, while a few make even the largest beasts of the forest their prey. In the temperate zone, where food is hard to find in the cold season, many animals hibernate or sleep all winter, waking up, like the trees, in spring. Others migrate in search of food, making their way to lower latitudes in winter, and returning to higher latitudes in summer. Many northern birds fly enormous distances in their annual wanderings; the swallows and storks which spend the summer in northern Europe retire every winter to the coast of Africa. Animals which remain throughout the winter without hibernating are usually protected from the cold by an increased growth of white fur or feathers. Thus the mountain hare and the ptarmigan, which are brown in summer, when they live amongst the heather of the hillsides, become



snowy-white every winter, and so cannot be seen by their enemies on the snow. In the extreme north, where ice covers the ground almost the entire year, and there are no plants at all, the few land animals are savage white-furred flesh-eaters like the polar bear, preying on fish and other sea creatures.

**63. Distribution of Animals.**—The animals inhabiting the great continents have a kind of family likeness, although they vary according to their varying surroundings and the degree of isolation of the regions. Wherever natural barriers exist, such as wide deserts, high mountain ranges, or the sea, the animals living on the two sides of them, although perhaps descended from the same ancestors, show distinct differences, in consequence of the different conditions of their homes. In the same way a pug and a St. Bernard, although both dogs, have by different breeding been made quite unlike each other. The Earth's surface has been divided into realms, in each of which there is a peculiar *fauna* or collection of animals, and usually a special *flora* or group of plants. No very sharp limits can be drawn between them, as the animals of neighbouring realms usually meet in a transitional belt, which can be classed equally well with one or the other.

**64. The Old Northern Realm** extends over the whole of northern Eurasia to the Arabian Deserts, and the great Himalaya Mountains, and into Africa as far as the Sahara Desert. At Bering Strait this realm comes within 40 miles of the **New Northern Realm** of America, and the two faunas, though different, have many remarkable resemblances. In both the huge white polar bear and beautiful arctic fox prowl over the snow-fields in the north, reindeer and dogs are kept by the hardy hunters and fishers, the precious fur-seal lands on the islands which unite the continents of Eurasia and America, and farther south common seals flock on the shores. Various tribes of deer are common to both, but the long-horned buffalo, the hare, and the rabbit of the Old World are represented by the shaggy, wild-eyed bison, the burrowing prairie-dog (which is not a dog at all), and the lemming in the new. The camel is to the dwellers in the steppe-lands bordering the sand deserts to the

south of the Old Northern Realm what the reindeer is to the people of the tundras edging the ice deserts of its arctic limits.

**65. The Ethiopian Realm** includes Africa, south of the Sahara, and the southern extremity of Arabia. Here the lion, long claimed as the "king of beasts," the spotted leopard, the gorilla (an ape as tall as a man and far stronger), many other tribes of narrow-nosed, tailless apes, the two-horned rhinoceros, the tall giraffe, the clumsy but sagacious elephant, and the ostrich, whose long legs more than make up for its powerless wings, wander through the woods, or race like the graceful antelopes and striped zebras across the plains. The unwieldy hippopotamus and armour-clad crocodile splash in the muddy rivers, while the flesh-eating vulture, with its long bare neck, sails through the air watching for its prey.

**66. The South American Realm** on the other side of the Atlantic contains animals curiously like all these, but as a rule smaller and less fierce. The puma and jaguar, small copies of the lion and leopard, haunt the forests, which are filled with chattering broad-nosed monkeys, swinging from the trees by their long tails. The long-nosed tapir and little grunting peccary, the vulture-like condor, the rhea (a diminutive ostrich), and the alligator in the rivers correspond to familiar forms of the old world; and the patient little llamas, vicunas, and alpacas of the Andes work as hard as their larger eastern kinsman the camel.

**67. The Eastern Realm** includes Asia south of the Himalaya Mountains and Yang-tse-Kiang river, and all the islands of the Eastern Archipelago, except New Guinea. The fauna is like that of the Ethiopian realm. There are elephants, rhinoceroses, crocodiles, and vultures; but in addition, stealthy tigers creep through the jungles, long-armed monkeys like the orang-utan, leap from tree to tree, wild cattle and gorgeous birds come down to the forest pools to drink, and insects more brilliant than those of any other region shoot meteor-like through the air.

**68. The Australian Realm**, embracing Australia, Tasmania, and New Guinea, is the home of animals and plants unlike any others in the world. The long-tailed kangaroo and tree-climbing opossum are especially characteristic. The animals are almost

all marsupials, which means that their skin has a pouch in which they carry their young for some time after they are born. Harsh-voiced cockatoos and the ostrich-like emu are the typical birds.

**69. Breeding.**—The nature and distribution of animals has been altered by man even more than that of plants (§ 61). All creatures dangerous to life, such as lions, tigers, bears, and large reptiles, are killed wherever they can be found; and all those which yield valuable products, either feathers, furs, ivory, or oil, are diligently hunted, until in many cases every one of a particular kind in the world has been killed, and the race is extinct. **Domestic animals**, after being made serviceable by breeding and training, have been carried to all parts of the world, and horses from Europe now run wild in America; while cattle, sheep, and pigs are found everywhere, usually remaining tame, but sometimes returning to a wild state, like the savage little pigs that scamper over many of the Pacific Islands. Rabbits, also, brought from Britain as pets, have multiplied a million-fold in Australia and New Zealand, and are greater pests to sheep-farmers than droughts or floods (§ 310).

**70. MAN.**—Although inferior to the other animals in possessing a thin skin without a covering of fur or feathers, men, even of the lowest kind, are so far superior in their mental powers, and can use their hands to such good purpose, that this very weakness actually becomes a source of strength. By regulating his clothing a man can live in any part of the world, while animals are confined to narrow limits of latitude or altitude. It is truly said that all men are brothers. No contrast, indeed, could be stronger than that between the crouching, black, low-browed, brutal, Australian aboriginal, who has no thought except how to satisfy his pressing wants, who cannot even make suitable clothing for himself, and the erect, fair, educated native of northern Europe, whose high-arched forehead suggests the generous nobility of his nature, and with whom his own personal needs obtain less attention than the welfare of his race. But, between these extremes, there is a complete chain without any abrupt change from one link to another. Sometimes, even amongst the most advanced people, there are individuals with

the untamed instincts of savages, and in the lowest nations individuals with some finer feelings rise far above the level of the rest. So it has been proved that all mankind forms one family, that all have descended from the same ancestors, although circumstances, such as those which gradually changed the appearance and nature of plants and beasts, have brought about some broad differences between the human dwellers in different parts of the world.

**Civilisation** is the result of using the power which men have of changing their natural surroundings, and regulating their natural wishes and impulses, in order to increase the well-being of the community to which they belong. Each different race of mankind appears able to reach a certain degree of mastery over their surroundings and themselves, and some cannot become so highly civilised as others.

**71. Religion**, or the relation between man and the Creator, also appears progressive, and in its higher forms it produces the highest civilisation. The lowest peoples have only a vague dread of evil spirits and of the ghosts of their ancestors. They worship *fetiches* or rude idols, in which these spirits are supposed to dwell; and by sacrifices they attempt to appease the anger of the spirits. People at a higher stage believe in a multitude of gods, who have created and rule over special parts of nature—the hills, the woods, the plains, or the sea; and they respect and worship images of these, not as gods, but as representing them. This form of religion is known as **polytheism**, and has been held by many nations of high civilisation in times past, of whom the Egyptians, Greeks, and Romans are examples. A higher stage of this form of religion is **pantheism** (of which Buddhism is a type), the belief that God is not only everywhere in the whole world, but that every thing in the world, and men themselves, are part of Him. The highest and most civilised races are **monotheists**. They recognise that there is only one God, who created the world, and sustains it. The Monotheists are now divided into three great sections—the **Jews**, who follow the Old Testament, the **Christians**, all sections of whom accept the New Testament, and the **Mohammedans**, whose lives are regulated

by the Koran, compiled from the Jewish and Christian Scriptures by Mohammed.

Although there are many millions professing almost every religion who give so little thought to the matter that their creed does not affect their conduct, in some cases whole nations are ruled by religious customs most rigidly followed, such as the laws of caste in India, and the practice of Tabu in the Pacific Islands. Christianity and Mohammedanism are unlike all other religions, in belonging to no special race or climate, and the former is steadily extending over the world, taking the place of many of the old race religions; which, as a rule, have become greatly degraded, and debase rather than elevate those who follow them.

72. Three great types of mankind which are characterised by the appearance of the people can be easily remembered: they are the *Black*, *Yellow*, and *White*.

The **Black Type**, with a black or dark brown skin, woolly black hair, broad flat noses, and projecting jaws, inhabit the southern hemisphere in Africa and Australasia, and are the most degraded and least civilised of the human kind. The number is small and diminishing. As a rule their religion is fetichism; but many Africans, both in their own country and as slaves in other lands, have become Christians or Mohammedans, and have advanced in civilisation.

73. The **Yellow Type** numbers more than one-third of the people of the world, and is widely spread. The people, as a rule, vary from yellow to dark brown in colour, with long, straight black hair; the nose is prominent, and the lower part of the face does not project so far as in the Black type.

The *Mongolian*, one great section of the Yellow type, includes the inhabitants of most of Asia, the Turks, Tartars, Chinese, and Japanese, the Samoyeds, and Ostiaks of the extreme north of Europe, the Esquimaux and other northern tribes of Asia and America. Amongst the Mongols the chief religions are Mohammedanism and Buddhism.

The *Malayo-Polynesian* section living in the islands of the Pacific and New Zealand are the handsomest and most graceful

people of the Yellow type, and by their readiness to adopt Christianity and civilisation they are sharply distinguished from the people of the Black type, with whom they are often thoughtlessly classed.

The *American* section includes all the natives of North and South America, popularly known as *Red Indians*, because the people whom Columbus first saw in the islands of the Caribbean Sea (which he supposed to be part of India) had a bright complexion. At one time they exhibited a remarkable degree of civilisation, but are now degraded and disappearing as a separate race.

**74. The White Type** of mankind, originally occupying south-western Asia and Europe, is the most numerous ; it includes the most highly civilised and powerful races who have ever lived, whose influence has extended from Eurasia to America, Australia, and all parts of the world. It is characterised by wavy hair and a straight face, the jaws being less prominent, and the forehead larger than in the other types.

The *Semites*, including the Hebrews and Arabs, and the *Hamites* or people of northern Africa—who, although dark, are quite unlike negroes—are distinct races, showing little affinity with the great group of *Aryan* or “Indo-Germanic” peoples which includes most of the type and now occupies all Europe, the greater part of India, North America, and Australia. The Aryans are descendants of one ancient ancestral tribe, and although now inhabiting widely separated countries and split up into different races, they still retain in their various languages a similarity in the names for places and things that stamps the speakers as kindred (§§ 94, 95).

**75.** The numerous races of mankind speak different languages as a rule. Only seven languages amongst the hundreds that exist are each employed by more than 45,000,000 speakers, but these seven serve 960,000,000 out of the 1,460,000,000 who inhabit the Earth.

#### MILLION SPEAKERS OF THE CHIEF LANGUAGES.

Chinese.	Hindustani.	English.	Russian.	German.	Spanish.	French.
400	200	100	100	60	45	46

French, although the language of only 46,000,000, is spoken as a foreign tongue by educated people in all civilised nations, and it is employed in all discussions and treaties between the governments of civilised countries.

**76.** The exact form of government is different in every community or group of people united for purposes of security or advantage, but there are two main kinds—government of a chief or *monarchy*, and government by the people themselves or *democracy*.

Amongst savage tribes chiefs usually rule in accordance with rigid customs that are really laws. At a certain degree of civilisation, such as that of the semi-barbarous people of northern Africa and formerly in India, there is often **despotism**. The chief, calling himself prince, king, or emperor, governs the people according to his own will or caprice. In the **autocratic monarchies** of civilised countries, such as Russia, the emperor rules the people by laws made by himself and a council of his own choosing. In a **limited monarchy** the emperor or king has his power limited to a greater or less degree by a parliament composed of members elected by the votes of the people. In a democracy or **republic**, an elected parliament of representatives of the people make the laws, and administer them under the direction of a president elected to serve for a certain time. Some limited monarchies, such as Germany, differ little from autocratic monarchies, but in others, such as the United Kingdom, the monarch has, in some respects, less power than the president of a republic like the United States.

**77. Towns.**—The houseless life of savages and the changing encampments of wandering tribes are unsuited to civilised people who gather together and settle at or near places that offer special conveniences, such, for instance, as ground naturally suitable for defence, easy pathways by road, river, or sea, or the existence of mineral fields. Some of these inducements to settlement are stronger at one time, some at another; thus formerly towns were built in steep and inaccessible places, so that they could not be easily attacked, or they grew around a crag occupied by a strong castle, in which the people might take refuge in case of danger.

In Britain, in the United States, Germany, and France most of the great manufacturing towns are built on coal-fields. When the valuable products of a country are not concentrated in mines, but have to be gathered over a wide extent of land, a great many of the people must be scattered in farmhouses and villages, and large towns will only grow up at places where the produce is collected for export, or where the means of carrying it has to be changed. Thus nearly half of the towns with over 100,000 inhabitants are **seaports**, where goods are changed from land-carriages or river-boats to ships; and many of the others are situated on rivers where goods must be changed from river-boats to land-carriages. Recently **railway junctions**, where several lines converge from different parts of the country, have sprung into importance, just as the meeting-places of caravan tracks and of highroads had formerly done. The places where roads or railways intersect are usually fixed by the physical features of a country; if the land is much accidented or broken by hills, the lines of land-carriage either creep round by the coast or wind along the river-valleys and over the mountain passes, so where two river-valleys meet there is frequently a town or village, even when the streams are not navigable.

Towns being no longer built for defence, those that now arise, or rapidly increase, occupy the lowest ground available, near the sea, or a great navigable river, or a main railway line. The old inaccessible cities gradually dwindle down, or their old parts become of less consequence than the new portions which have sprung up on the low ground around. In the same way, when the staple industry of a region changes, the people gradually migrate to places more suited for their new occupations.

**78. Man's Power in Nature.**—The power of man over his surroundings is great enough to overcome most of the natural obstacles to travelling and the rapid carriage of goods. The oceans are crossed by **steamers**, with a regularity that can be counted upon to a few hours in a voyage of several thousand miles. **Canals** have been cut to avoid circuitous and stormy voyages, such as that round the Cape of Good Hope to India, and to connect great rivers flowing into different seas. **Rail-**



**ways** have been built through deserts that men could hardly cross at the risk of their lives ; they have been driven in long tunnels through mountains that naturally form almost impassable barriers, and across arms of the sea by tunnels or bridges. Open bays, which ships could not visit for fear of being caught in a storm and wrecked, have been enclosed by solid walls to form great **harbours** ; and rivers like the Clyde, which once only floated small boats, have been deepened for miles to let in the largest ocean steamers.

Most wonderful of all, **telegraph wires** have been laid down on every sea-bed and across every continent, so that messages may be sent in a few minutes, or a few hours at the most, between any of the important cities of the world. It is within human power to change the **climate**, and even the soil of a locality by planting forests, which lead to an increased rainfall and regular rivers, or by felling trees, which reduces the total rainfall, and leads to periods of alternate drought and devastating floods, washing away the soil and making the land barren.



FIG. 1. A PASS IN THE HIMALAYA MOUNTAINS, TWO MILES ABOVE BEATEVPEL

## CHAPTER IV

### THE CONTINENT OF EURASIA

**79. Dimensions.**—The great land-mass of the Old World, comprising Europe and Asia, may be conveniently considered as one vast continent to which the name of *Eurasia* has been given. It extends from west to east more than half-way round the globe. Its form is roughly triangular, the three angles being occupied by Spain in the west, the East Cape at Bering Strait in the north east, and the Malay peninsula on the south. From its most westerly point Cape Roca in Portugal,  $9^{\circ}$  W. (in  $39^{\circ}$  N.

lat.), to its most easterly, the East Cape on the Arctic Circle,  $170^{\circ}$  W., the distance is over 7000 miles. The greatest breadth from north to south lies along the meridian of  $105^{\circ}$  E., which passes overland from the bare Cape Chelyuskin, projecting far through the ice of the Arctic Sea to  $77\frac{1}{2}^{\circ}$  N. lat., to the picturesque forest-clad Malay peninsula, bathed by the hot equatorial rains of  $1\frac{1}{4}^{\circ}$  N., a distance of more than 5000 miles. The area, not including islands, is nearly 20,000,000 square miles, or more than one-third of the land surface of the globe.

**80. North Coast.**—The dreary flat north coast, entirely within the Arctic Circle, and chafed by the ice of the Arctic Sea, was first sailed round by the steamer *Vega* under Nordenskjöld, a Swedish explorer, in 1874; but the sea is only open for navigation for a few uncertain weeks in summer, when the mouths of its great rivers, the Obi, Yenisei, and Lena can be reached. The Kara Sea, which is beyond the limits of ordinary sea trade, is shut off from the Atlantic by the snowy islands of Nova Zembla, a prolongation of the Ural Mountain range. Westward of this the gulf-stream water allows of free navigation all summer, the White Sea being open for five months.

**81. West Coast.**—At the North Cape, on the little rocky island of Magerøe, in lat.  $71^{\circ}$  N., the coast turning southward is formed by a high plain trenched by fjords, which sinks abruptly at the Naze (or *Nose*, a cape in  $58^{\circ}$  N.), where the deep Skager-rak indents the coast. It leads through the narrow Kattegat (*i.e.* *Cat's throat*) to the shallow flat-shored Baltic or *East Sea*, which runs northward and eastward into the two land-locked gulfs of Bothnia and Finland. The rough North Sea or *German Ocean*, shallowing towards the English Channel in the south, is shut off from the Atlantic by the British Islands from  $60^{\circ}$  N. to  $50^{\circ}$  N. The North Sea bounds the sandy, shelving western coast of Europe, and runs inland in the shallow estuaries of the Elbe, Rhine, and other rivers of the northern plain. Farther south the wide sandy shores of the square-cut Bay of Biscay, with its huge Atlantic rollers, separates the rocky peninsula of Brittany from the high plains of the Iberian peninsula which stretches south to  $36^{\circ}$  N., and forms the massive corner-piece of Eurasia.

**82. South Coast.**—The Strait of Gibraltar cuts through the mountain range that no doubt once united Europe with Africa, in  $5^{\circ}$  W. long., and the salt blue **Mediterranean Sea** extends for  $40^{\circ}$  eastward, winding round four peninsulas. Between the Iberian, which points S.W., and the Italian, which trends S.E., lies a wide mountain-girdled bay, the eastern portion of which is shut off by the twin islands of **Corsica** and **Sardinia**, and by **Sicily** to form the **Tyrrhenian Sea**. This eastern barrier, at a geological period not very remote, may have extended as a continuous land ridge to Africa. The east coast of Italy, parallel to the half-submerged Balkan peninsula, encloses a shallow gulf, the **Adriatic Sea**, and the maze of islands connected with this region stretches across the **Aegean Sea** to the peninsular high plain of Asia Minor. The narrow channels of the Dardanelles and Bosphorus form the outlet of the deep **Black Sea**, the coast of which is mountainous to south and east, but shelved into flat shores on the north by the silt brought down by the great rivers Danube, Dnieper, and Don.

Thus in the western portion of Eurasia the land is invaded by bays and seas from the north and from the south, being cut up into peninsulas and archipelagoes more than any other part of the world. The south coast of the Asiatic portion of the continent repeats on a far larger scale the features of the European. A flat isthmus of desert sand between the Mediterranean and the Red Sea, traversed by the Suez Canal for 100 miles, separates Eurasia from Africa. The rugged high plain of Arabia, square and solid like Spain, forms a huge bare wall of sun-scorched rock, fringed with coral reefs and islets along the **Red Sea**. The south-western corner, in  $12^{\circ}$  N. lat., is only 20 miles from the coast of Africa at the stormy Strait of Bab-el-Mandeb (*i.e.* the *Gate of Tears*), which is split into two channels by the little island of Perim; and from this point the land turns north-eastward along the Gulf of **Aden**. Neither rivers nor harbours break the monotony of the cliff-girt coast for hundreds of miles. The shallow **Persian Gulf**, entered by the Strait of Ormuz, runs north-westward, and, like the Adriatic, is continually growing shallower by the sediment brought down by its great river the

Shat-el-Arab. Its eastern coast runs due east below the mountains of the Iran high plain in lat.  $25^{\circ}$  N. to Cape Monz, a projecting headland of the eastern buttress chain of mountains.

The great Indian peninsula, commencing at this point, projects southward for 2000 miles to within  $8^{\circ}$  of the equator. The west coast, at first formed by the margin of a great flat desert stretching from the Indus delta, grows gradually higher towards the south, where the steep, thickly-wooded slopes of the Western Ghats, the barrier range of an irregular high plain, front the sea for 1000 miles. The large island of Ceylon is properly a part of the continent, bound to it by a chain of rocks and shallows called Adam's Bridge, across Palk Strait, which is so shallow that steamers cannot pass through. From Cape Comorin, at the southern extremity of India, the eastern coast runs north-eastward as a smooth sand shore below the irregular and distant line of the Eastern Ghats. It is beaten upon by an unceasing surf, and broken by no navigable rivers, or any bays of deep water. The north of the Bay of Bengal, just touching the tropic of Cancer, is fringed by a low, swampy delta, where the mingled waters of the mighty Ganges and the impetuous Brahmaputra enter the sea by many interlacing channels.

The mountainous three-lobed extension of Indo-China, which, with its archipelago, seems like a giant Balkan peninsula, marks the south-eastern corner of Eurasia. Its short eastern portion stops abruptly in the Gulf of Martaban, where the Irawadi and Salween pour into the sea. The central portion runs far to the south of the others in the narrow, club-shaped Malay peninsula, separated by the Gulf of Siam from the third division, which terminates in the sharp nose of Cape Cambodia, near the delta of the Mekong.

**83. East Coast.**—The third division of the Indo-China peninsula is the most southerly of three great semi-circular outcurves of the east coast, separated by three similar incurves or wide bays; and from Cape Cambodia northward the wide sweeps of the coast become increasingly indented with small bays and capes which form and protect many good harbours. The Gulf of Tonkin, the southern incurve, with its little peninsula

of Lieu-Chow and the island Hainan in  $20^{\circ}$  N. and  $110^{\circ}$  E., corresponds in general form to the larger middle incurve of the **Yellow Sea**, with its larger peninsula of Korea in lat.  $35^{\circ}$  N. beyond the great middle outcurve. The largest river of China, the Yang-tse-Kiang, enters the Yellow Sea at its southern margin, and the Yellow River pours in its turbid stream a little farther north, laden with the yellow mud, from which the river and sea have been named. The third or northern outcurve, north of Korea, is formed by a steep mountain wall fronting the sea. At its northern end the large island of **Saghalien**, in the latitude of southern England, was long supposed to be merely a peninsula, hence the strait separating it is called the *Gulf of Tartary*. The Amur enters at the north of the outcurve, which then sweeps round into the **Sea of Okhotsk**, the northern incurve, shut in on the north-east by the peninsula of Kamchatka, a south-pointing mass of land, shaped like the end of the Malay peninsula, but although in the same latitude as the British Islands ( $50^{\circ}$  to  $60^{\circ}$  N.), it is ice-blocked for half the year. From its southern point, Cape Lopatka, a steep bleak coast, on which icebergs are launched from the glaciers of the snow-covered mountains, runs northward in several dismal bays to East Cape on the arctic circle, whence our survey of the coasts commenced.

**84. Eastern Island Chain.**—From Cape Lopatka a fringe of islets, the Kuriles, runs to the southern point of Saghalien, whence a wider belt of larger islands—the **Japan group**—stretches, parallel to the northern outcurve, to Korea, enclosing the **Sea of Japan**. A third festoon of islets, the Loo-Choo group, enclosing the **East China Sea**, links Korea with Formosa on the tropic of Cancer just opposite the middle of the central outcurve.

**85. Eastern Archipelago.**—The vast group of the Eastern Archipelago is connected with Asia through Formosa on the north-east, the **Malay peninsula** (which is simply a part of the archipelago not yet detached) in the centre, the Nicobar and Andaman Isles on the north-west, and with Australia, by **New Guinea**, towards which the eastern and western bounding chains of islands, and the central group they enclose, converge. The

western chain or **Sunda islands** faces the Indian Ocean. These islands are long, narrow, ridged into mountains on the west or south coast, but flatter on the north and east. The largest, **Sumatra**, closely approaches the Malay peninsula; south of it the shorter and narrower **Java** runs eastward, and the chain terminates in a dozen diminishing islets curving towards New Guinea. The central group starts from the huge massive **Borneo** (the largest island in the world not called a continent), which is crossed in the middle by the equator. **Celebes**, to the east, somewhat resembles a starfish, and the islands of the eastern chain, which runs southward from Formosa through the richly-indented **Philippine** group and the **Moluccas** to join New Guinea, are even more varied in outline. This maze of islands divides several partially enclosed seas, connected by innumerable straits and channels. The narrow, deep Lombok Channel between Bali and Lombok, the islands east of Java, and the equally deep, but wider Strait of Macassar, between Borneo and Celebes, cut the archipelago into a north-westerly part, which once formed part of Asia, and a south-easterly part which was anciently attached to Australia.

Entered through the Strait of Malacca from the west, the large **South China Sea** stretches from Sumatra between Asia and the north coast of Borneo and the west of the Philippines. It opens southward in three channels formed by the tin-bearing islands of Billiton and Banka to the shallow **Java Sea** between Java and Borneo. This in turn communicates with the Indian Ocean by the Strait of Sunda between Sumatra and Java, and merges to the east in the small but profound **Banda Sea**, and to the north-east gives access by the Strait of Macassar between Borneo and Celebes to the equally deep **Sea of Celebes**.

**86. Form of the Surface.**—A vast triangle of low lands in the north-west of Eurasia is bounded by the sea on its base to the north and west, and by mountains to south and east along a line drawn from the Thames to Pamir ( $40^{\circ}$  N. and  $70^{\circ}$  E.), thence at right angles to Bering Strait. The wild, rugged, high plain of **Pamir**, the *roof of the world*, as the name implies, is the centre of the highlands of Eurasia, which diverge from it to

north-east in still higher masses, and to south-west in a lower and narrower band.

**87. Eastern Mass of Asia.**—The **Himalaya Mountains**, a range upheaved in a wide curve convex to the south, sweep south-eastward from Pamir. They rise abruptly from a great level low plain in Northern India; their flanks, marked by successive zones of tropical and then of temperate vegetation and animal life, mount upward into a region of perpetual snow. The highest summit in the world is here, **Mount Everest** (29,000 feet), and the lowest passes cleft in the Himalayan wall are 3 miles above the sea. This barrier is the base of a right-angled triangle of the highest plains in the world, buttressed by mountain ranges of ancient rock, stretching north-eastward for 4000 miles, and gradually narrowing and lowering as it proceeds. The Himalaya range is a triple row of heights, separated by longitudinal valleys, and beyond it the **high plain of Tibet**, averaging 18,000 feet ( $3\frac{1}{2}$  miles) in height, stretches northward for 1600 miles. The **Kuen-lun** and **Altyn-tagh** mountain chains stretch eastward from Pamir, along the northern edge of the table-land of Tibet. Their northern slopes sink to a lower and larger table-land, itself a high plain more than 3000 feet above the sea, but rimmed round on every side by lines of higher mountains. At the eastern end of the lofty plain of Tibet the ranges of the Himalayas turn southward in a complicated series of ridges. These form rugged ranges which gradually decrease in height, and run into the peninsula of Indo-China, where they are separated by deep valleys, through which the Irawadi, Salween, Mekong, and Yang-tse-Kiang flow. The Altyn-tagh and northern part of the buttress of Tibet diverge north-eastward, and slope down to the great Chinese low plain which is watered by the Yang-tse and Yellow River in the middle coast outcurve.

**88. Gobi Lake-bed.**—The high plain north of Tibet is a vast dry basin, measuring 700,000 square miles, and was once the bed of an inland sea now dried up. The few rivers that reach it from the bordering mountains either entirely dry up as they flow along, or pour into small salt lakes from which there is no outlet. Under the names of the **Tarim Basin** in the west,



and the **Gobi Desert** in the east, this depression is for the greater part a tract of dry sand, on which nothing grows.

The **Tian-shan Mountains** curve north-eastward from Pamir round the Tarim Basin, and are separated by huge valleys, that once discharged the waters of the inland sea to the north, from the short parallel ranges of the **Altai** and **Sajan Mountains** in the latitude of southern England, and the high plains of **Vitim** and **Aldan**. All these rise above the general level of the Gobi, and sink in terraces north-westward to the low plains of the north. On the north-western side of this line of heights which buttress the desert high plain, the great rivers of northern Asia take their rise. Near the base on this slope there are two large lakes—the brackish **Balkash**, with no outlet, below the **Tian-shan**, and fresh **Baikal**, draining to the Arctic Sea, under the **Vitim** high plain—separated by several smaller lakes. The eastern boundary of the old Gobi lake is separated from the northern low plain of China by the **Chingan** and **Stanovoi** mountain ranges, which converge with the northern buttress ranges of the **Aldan** high plain, and continue with diminishing height to East Cape.

**89. Western Mass of Asia.**—From Pamir the rugged ranges of the **Hindu Kush** and **Suleiman Mountains** throw their high but narrow barriers across between the low plain of Lake Aral to the north, and that of India to the south, and diverge so as to form the border ranges of the **Iran high plain**, enclosing a desert like the Gobi on a small scale. The northern border range, the **Elburz Mountains**, looks northward over the Caspian, and converges with the southern ranges to form the **high plain of Armenia** and **Asia Minor**. This is terminated on the north by the magnificent straight chain of the **Caucasus**, whose line of snowy crests faces the north pole across a stretch of low plains unbroken by any height worth calling a hill. To the south the high plain of Asia Minor curves round the Persian Gulf, enclosing the low plain of Mesopotamia, and widens into the desert high plain of Arabia.

**90. Caspian Basin.**—The level of the Caspian Sea is now 85 feet below the Black Sea on account of great evaporation,

although it receives the whole drainage of 3,000,000 square miles, and has no outlet. From the south-east end of the sea a broad strip of exceptionally low ground crosses the low plain northward to the Gulf of Obi on the Arctic Sea through the reedy Lake Aral, which is also diminishing in size in spite of the water poured into it by the Amu-darya from the heights of Pamir, and by the Syr-darya from the slope of the Tian-shan. This depression is formed of rocks of recent marine origin, which proves that not long ago, geologically speaking, a wide channel stretched between the Arctic and the Black Seas. On the western side of this depression the gradual line of elevation of the low **Ural Mountains**, an isolated belt running along the meridian of  $60^{\circ}$  E., separates the gently north sloping low plain of the Obi from the gently south sloping low plain of the Volga.

**91. Mass of South Europe.**—The high plain of Asia Minor is continued westward along the southern half of Europe and the north-west of Africa as a broad band of mountains of elevation, great ridges running as a whole from east to west, many of the crests rising far above the snow line. From the western end of the great central mass of the **Alps**, in which Mont Blanc (15,800 feet) is the highest summit, the **Apennines**, run south-eastward into the Italian peninsula, separated by the plain of the rivers Po and Adige from the Alps. Towards the east, the east and west foldings or mountain ranges, with longitudinal valleys between them, turn to a general north and south direction, and diverge from the eastern end of the Alps to form the **Balkans**, which occupy the Balkan peninsula.

In the centre of Europe the steep, jagged, snow-clad crests of the Alps give place to a high plain, edged to the north by the **Jura Mountains**, and spreading eastward through the high plain of Bohemia to the **Carpathians**. These rim round the low plain of the Danube, which was once a great lake, and join the Balkans in  $22^{\circ}$  E., sinking by successive terraces to the wide low plain of Russia. The mountain land of southern Europe spreads northward of the Jura with decreasing height, and terminates at the isolated group of the **Hartz** in  $52^{\circ}$  N;  $10^{\circ}$  E.

The Alpine land mass is separated by the steep valley of the

Rhone from the **French high plain**, which slopes gradually to the northern low plain on the coasts of the English Channel and Bay of Biscay.

The massive high plain of the **Iberian peninsula**, ridged with range after range of east and west heights, is buttressed on the north by the snow-crested **Pyrenees** and **Cantabrian Range**, and on the south, by the **Sierra Nevada**; the general slope being westward, sending the longest of its small rivers into the Atlantic.

**92. Geology of Europe.**—The rocks of which this high-land region of south Europe consists are mostly made of hardened sands and silts which were deposited under water at a time when the great masses of ancient crystalline rocks of the north-west in Scandinavia and Scotland rose as a long range of high ground fronting the Atlantic. Owing to a series of great movements whereby the crust of the lithosphere was folded and wrinkled, the horizontal strata were thrown into a succession of ridges, with intervening valleys. Some of these ridges, like the Alps, were so lofty, sharp, and steep that the bent and twisted rock layers cracked along the summit, and allowed the older rocks underneath to protrude. The subsequent wearing and filing of rain, rivers, and glaciers, continued through a long succession of ages, have carved the mountains into their present forms, ploughing their sides into transverse valleys, and in many places completely cutting through the mountain chains, so as to form passes. The highest peaks of the Alps thus consist of the older underlying crystalline rocks; but the slopes on either side are covered with the newer sedimentary rocks which were once laid down on the sea-floor. Among these younger rock masses a wide band of limestone gives a special character to the Jura on the north, and the Dalmatian Alps on the south. Over the vast low plains of the north the recent rocks have been little disturbed, and the gentle rises and falls of the surface hardly break the level monotony of the plain. All round the shores of the North Sea and the Baltic the wide heathy flats, dotted with small lakes and marshes, are composed of clay and sand not long raised out of the sea. North of the Gulf of Finland and the

great lakes Ladoga and Onega, that prolong its depression eastward in lat. 60° N., the low granite plains of Finland have been planed smooth by the ice-sheet which formerly overspread Europe, and are plentifully dotted with little lake-basins.

**93. Watersheds.**—There are three main watersheds in Eurasia which determine the flow of the principal rivers. (1) The greatest is the **Asiatic**, formed by the mountains enclosing the Central Asian depression, from which the drainage flows partly inwards into the vast enclosed basin of the interior, and partly outwards to the Caspian, the Indian Ocean, the Pacific Ocean, and the Arctic Sea. (2) The **European** high land forms a centre whence rivers radiate to the Atlantic, the North Sea, the Baltic, the Black Sea, and the Mediterranean. (3) The **Russian** watershed traverses a gentle dome-like uprise of the centre of the plain, which reaches its highest summit in the Valdai Hills, and continues eastward in a faint ridge to the Ural Mountains. From this low centre great sluggish streams creep across the plain to the Arctic Sea, the Caspian, the Black Sea, and the Baltic, often forming extensive marshes.

**94. People and History.**—Long before the dawn of history the eastern coast lands of Eurasia were probably peopled by tribes of the Yellow type of mankind. The central high plains were then well watered and inhabited by different and more warlike *Mongols*, whose prowess was beginning to resound over the entire continent. The vast southern peninsula of India was the home of small dark-skinned tribes called *Kolarians* and *Dravidians*. The fertile plain of Mesopotamia pastured the flocks of *Semites* dwelling in tents, and divided into tribes, over which the patriarch or family chief exercised an absolute rule. To the north the low plain of Lake Aral was astir with the life of a brave, light-hearted, simple people, cultivating the ground, and keeping flocks of sheep and herds of cattle. To these the name of *Aryan*, "the noble," has been given. Westward through the tangled forests of southern Europe and the undrained mosses of the north, *Iberians* and other tribes of the Yellow type, like the *Lapps* or the *American Indians*, led a savage life in small isolated settlements. When traditional and written history begins this

arrangement was being disturbed. It seems as though the drying up of the inland seas of central Asia drove the fierce Tartar tribes outwards. Some descending on the outcurves of the eastern coast conquered the inhabitants, and mixing with them founded the ancient empire of China; others pressing westward commenced to harass the home of the Aryans, who in turn sent out in successive ages great hordes of wanderers, pushing their way into the lands held by feebler people.

**95. Aryan Movements.**—A swarm of Aryans gradually made their way along the Mediterranean shore, driving out the native Iberians, and changing their own dialects and habits as generation after generation of them travelled farther westward. These were the **Kelts**, whose descendants still live in the extreme west of Europe. At a later period a second swarm stronger and more intellectual than the first followed, and drove the Kelts, whom they did not recognise as kindred, before them as the Kelts had driven the Iberians. These settling in the mountainous Mediterranean peninsulas and islands, became the ancestors of all the **Romanic** peoples, who, as the *Greeks* and *Romans*, rose to be the chief civilised communities of Europe.

Once more the strong Aryan race sent off fresh bands of adventurers westward, taller and fairer than their predecessors, for the ages that elapsed between each emigration seem to have been long enough to allow of great alterations in the geography, and marked changes even in the appearance as well as the language of the tribes. These were named the **Teutons**, and took a more northerly course, driving the Kelts still farther westward, and pressing from the forests of central Europe on their more cultivated brethren, the Romanic people of the south, whose superior power in war long resisted conquest. While the Teutonic tribes were making their way and establishing homes in northern Europe, crossing the Baltic to Scandinavia and the North Sea to Britain, a less vigorous Aryan race, the **Slavs**, had struggled northward round the Caspian Sea, and spread out over the level plains and pathless forests of Russia.

Other tribes settled in the high plains of *Iran*, to which they gave their name, and finally the original nation was entirely

driven from its ancient home, a broad stream of emigrants forcing its way through the gorges of the Hindu Kush, driving the Dravidians and Kolarians from the banks of the Indus and Ganges, and originating the Hindu people on the great plain.

**96. Mohammedan Invasions.**—About 1200 years ago, after Aryan peoples had ceased to arrive in Europe, the Semitic *Saracens* or Arabs accompanied by Hamitic *Moors* from North Africa, both races of the White type, and the *Turks*, a warlike tribe of the Yellow type, long strangers to their central Asian home, and all animated by the zeal of the new religion of Mohammedanism, made a series of raids on Europe. The separate nations which the various Aryan races of Europe had formed were united for a time by their common Christianity to resist the invasion; and now, after centuries of fighting, none of the late intruders remain but the mixed descendants of the Turks in a small portion of the Balkan peninsula. The *Magyars*, a tribe of people like the Finns, living in the plains rimmed round by the Carpathians, still keep their ancient language. The Aryan nations of Europe at length began to spread abroad in all directions, across the seas to new continents in the west and south, and eastward over Asia, where the tide of Slavonic migration is now flowing.

**97. Countries.**—None of the races now inhabiting Eurasia is pure; most nations contain a mixture of several races, or even of different types, while at least one almost pure race, the Semitic *Jews*, do not form a nation at all. A number of people forming a settled community, and living on a definite area of land which they are strong enough to defend, or to extend at the expense of their neighbours, is known as a **nation** or **country**. The limits of a country change with the results of war and diplomatic negotiations, so that old maps can never be relied on as showing the political geography of a continent.



FIG. 2.—A STREET IN LONDON.

## CHAPTER V

### THE BRITISH ISLANDS

98. The geography of the **UNITED KINGDOM OF GREAT BRITAIN AND IRELAND** will be only briefly described here, as a fuller account of it is given in another of the volumes of this Series.<sup>1</sup>

The area of the United Kingdom is 121,000 square miles, but except Great Britain and Ireland the hundreds of islands composing it are small. They run north-north-westward for 700 miles from close to the coast of France (about 50° N.) to

<sup>1</sup> "An Elementary Geography of the British Isles," by A. Geikie.

opposite Norway ( $61^{\circ}$  N.); their limits of longitude extending from about  $2^{\circ}$  E. to  $10^{\circ}$  W.

The coasts of Britain and Ireland, especially on the west, are much cut into by bays and arms of the sea. Most of the small islands lie to the west and north, forming (1) the little Scilly group south-west of Cornwall; (2) the warm fertile Channel Islands, belonging physically to France, but politically to Britain; (3) the low bare Hebrides in a long double chain close to the north-west coast of Britain, and (4) the flat Orkneys and more rugged Shetlands far to the north.

**99. Configuration.**—The north of Britain is an old high plain—the Highlands—of crystalline rocks carved into ridges and mountains by valleys which contain beautiful lakes. At the south-west end of the remarkable hollow called the *Great Glen* stands Ben Nevis (4400 feet), the highest mountain of the British Isles. The rivers of this region are short and rapid, the Spey, crowded with salmon and flowing into the Moray Firth, is the swiftest in the kingdom. Farther south the hilly Lowlands, their coal bearing rocks covered with fertile soil, extend parallel to the Great Glen from the Firths of Tay and Forth on the east to the Firth of Clyde on the west. The rounded grassy southern Uplands of Scotland, including the Cheviot hills, are continued in the Pennine chain down the centre of South Britain, separating two large areas of coal and iron-bearing rocks. Along the west coast stretch the slate and granite mountains of Cumberland, Wales, and Cornwall. A great Plain extends eastward, ridged by two long low lines of limestone hills, radiating from near the Bristol Channel. The Oolitic ridge, ending in the cliffs of the Yorkshire coast, separates mining and manufacturing England to the north from agricultural England to the south-east. The Chalk ridge, farther south, splits up and meets the sea in white cliffs along the south-east coast. South-east of the Oolitic ridge there are no coals, but the rocks are covered with a fertile soil.

The rivers on the west are short and rapid as a rule; the longest are the Severn, with its tributary the Avon, both coming from the north, and entering the Bristol Channel.



On the east the rivers are long and sluggish. The **Humber** estuary discharges the rainfall of 9000 square miles, brought by the **Ouse** and its tributaries from the north-west, and by the longer **Trent** and its tributaries from the south-west. The shallow **Wash** gathers the drainage of the flat fen country, its chief river being the **Great Ouse**. Finally, the **Thames** crosses the greater part of south England, and expands into the busiest tidal estuary in the world. All these rivers of the plain are joined to each other by a complete system of canals.

Ireland consists of a great flat central plain, in many parts covered with a bog useless for agriculture, but surrounded by isolated groups of lofty and picturesque mountains. There are almost no coals in the island. The longest river of the British Islands, the **Shannon**, flows southward and westward through a chain of narrow lakes to the sea. •

**100. Climate and Crops.**—South-west winds prevail all the year, giving the mildest climate found anywhere in so high a latitude, but bringing also cloudy skies and a heavy rainfall to the western coasts, while the east is comparatively dry. Owing to its moist climate and boggy soil, Ireland produces luxuriant crops of grass and potatoes, hence its name of *Emerald Isle*. Cattle and pigs in great numbers feed on these crops. The mountains of Scotland and Wales support millions of sheep, while the good soil and warm, dry summers of eastern England ripen wheat well; and by skilful farming the yield per acre in *Lincolnshire*, *Yorkshire*, and *Essex* is almost the greatest in the world. Yet cheap transport from the vast wheat-fields of Russia, India, Australia, and America brings in so much wheat that English farmers find it more difficult every year to compete with the foreign importers, and hence scarcely more than half the land sown with this grain thirty years ago is now cropped in England, the rest being allowed for the most part to remain as pasture.

**101. People and History.**—The earliest dwellers in the British Islands, the Iberians or Basques, were dispossessed by the first great Aryan migration of Kelts, of whom the *Gaelic* tribes came first and the *Kymric* later. These the Romans conquered in southern Britain in the first century, but 400 years

later the Roman legions were withdrawn. Shortly afterwards the *Angles* and other tribes of **Teutons** of the low German family poured across the North Sea, and still later the *Northmen*, or Scandinavian Teutons from the shores of the Baltic, settled along the coast. The Kelts were thus pressed back to the less fertile and more rugged regions of the west, the Kymri to the mountains of Wales, the Gaels to those of Scotland, and across the strait to Ireland. In 1066 the Teutonic *Normans* coming from France conquered and made one nation of the kingdoms of southern Britain, which was already known as **England** (*land of the Angles*). Afterwards, although losing most of their French possessions, they conquered the Kelts of **Wales** and **Ireland**. They tried also to subdue the Teutons of northern Britain, who were of the same race and language as themselves. But in this they did not succeed. The northern Teutons and Kelts kept their nationality and their name of Scots. Their kingdom of **Scotland** remained independent until in 1603 the king, James VI, succeeded to the English Crown. Eventually the three kingdoms were formed into the United Kingdom; but the ancient differences of race are still shown by the varieties of language spoken within the limits of the British Isles. The Teutons of the lowlands speak different dialects of one common tongue, the *English*. The Kymri of Wales speak the Keltic language called *Welsh*, while the Gaels of Ireland and the Scottish Highlands speak another Keltic language, the Erse, Irish or *Gaelic*.

102. The population is densest in the manufacturing districts on the coal-fields, and thinnest in the mountainous regions; but the average for the whole islands is high, being more than 300 to the square mile. The **government** is a limited monarchy, with a legislature consisting of two houses, one of them hereditary (House of Lords), the other elective (House of Commons). Each of the three countries differs slightly in its laws and has separate courts of justice, but all elect members for the House of Commons, which, with the House of Lords and the Sovereign, constitutes the Parliament. There is a comparatively small **army**; and unlike all other nations, there is no compulsion for any one to join it. Equally uncommon is the large unpaid

volunteer force which may be called out to defend the country in case of war; but the chief reliance for defence is on the large and powerful **navy** which the nation wishes always to be supreme on the seas.

The prevailing religion in England is that of the Established Episcopal Church, in Ireland most of the people are **Roman Catholic**, and in Scotland **Presbyterian**; but there is perfect toleration. In trade there is similar freedom; unlike every other country in the world the United Kingdom has no protective duties, and stands first by a long way for the amount of its imports and exports. The imports consist in nearly equal amount of food (such as wheat, tea, sugar, and meat) and raw materials (cotton, wool, metal, wood, etc.) The exports are iron and coal produced in the country, with machinery, cotton and woollen cloth manufactured partly from native productions, but mainly from the imported raw materials.

103. The foreign possessions obtained by settlement or conquest are of vast extent; they are described in later chapters, where an account is given of the continents in which they lie, but their approximate area and population as a whole are as follows—

#### BRITISH EMPIRE.

	Area in sq. miles.	Population.
United Kingdom . . .	120,000	37,000,000
Possessions in Eurasia . . .	1,900,000	261,000,000
„ Australasia . . .	3,270,000	3,700,000
„ Africa . . .	770,000	3,800,000
„ North America . . .	3,510,000	4,600,000
„ South America . . .	110,000	3,800,000
„ West Indies, etc. . .	20,000	1,200,000
Total . . .	9,700,000	311,600,000

104. **Towns of Scotland.**<sup>1</sup>—The region of the *Northern Highlands*, full of grand mountain and lake scenery, has no towns except on the coast, and only a few villages in the romantic

<sup>1</sup> In describing the towns of each country the name is printed in a special manner to indicate political importance or population. The capital is given in old English type, other towns with a population which exceeds 100,000 in capitals, and smaller towns in small capitals. The population in thousands is added in brackets after the name.

glens. **INVERNESS**, at the north-east entrance of the Caledonian Canal through the Great Glen, is the chief Highland town on the east. **OBAN**, on a fine bay a little beyond the south-west end of the Great Glen, is the chief centre for tourists. To the west the little isle of *Iona* is interesting on account of the remains of early Christian churches, and *Staffa* for its marvellous basaltic cliffs. The seaport and University city, **ABERDEEN** (100), built of gray granite, stands on the coast east of the Highlands. Over the *Lowland* plain railways throng closely, joining the coal and iron mines and paraffin works of the interior to the busy manufacturing towns on the coast. **DUNDEE** (140), on the Firth of Tay, is the centre of jute-weaving. The ruined cathedral of the University city of **ST. ANDREWS** stands on the low coast, between the Firths of Tay and Forth. **EDINBURGH** (240), the capital of Scotland, on the south shore of the Firth of Forth, is one of the most picturesque cities in the world, and is full of historical memories. The medical classes of its University are thronged with students not only from Scotland but from England, Ireland, and all parts of the globe. The steel railway bridges over the Firths of Forth and Tay are the largest ever constructed. **GLASGOW** (750), up to which the channel of the river Clyde has been deepened to admit ocean steamers, is next to London the largest and busiest city of the British Islands. Not far to the north lies the lovely Loch Lomond, while to the south are coal-fields and manufacturing towns. All along the Clyde to **GREENOCK** is heard the ceaseless clang of riveters' hammers at work building steel steamers and sailing ships. •

**105. Towns of Northern or Manufacturing England.**  
—In the north-west the beautiful lake district has long been a favourite home of poets and haunt of tourists.

The Cotton coal-field in *Lancashire* and *Cheshire* on the western slope of the Pennine range carries the densest population of the whole country. **LIVERPOOL** (680), on the rapid muddy Mersey, is the great ocean outlet for the region. Every day dozens of steamers struggle up to the docks full of merchandise, and the raw cotton they bring is conveyed by train to **MAN-**

CHESTER (600), and other great inland towns alive with the whirl of spinning frames and the rattle of looms in many-windowed factories. And every day great steamers float down to the sea laden with cotton cloth, machinery, and emigrants for all parts of the world. On the east coast the **Iron coal-field** of *Northumberland* and *Durham* maintains the trade of **NEW-CASTLE** (200) on the Tyne, whence fleets of dingy colliers creep outwards past long rows of chemical and engineering works. **SUNDERLAND** (120), on the Wear, has the chief English steel shipbuilding yards; while inland **DURHAM**, with its University and fine cathedral, remains a quiet rural city. **SCARBOROUGH**, facing the North Sea in the east of Yorkshire, is a beautiful and fashionable watering-place, and **HULL** (160), on the Humber, is a busy seaport, whence fleets of smacks sail to the North Sea fisheries. **YORK**, a walled city, with a noble old minster, is the seat of the second Archbishop of the English Church. The *West Riding* and adjacent counties to the south share the **Woollen coal-field**, supplying factories where the oldest English textile is woven, now mainly from foreign wool, at **LEEDS** (300) and the many busy towns around it. **SHEFFIELD** (280), amongst the finest scenery of the Pennine range, has for centuries been famous for its cutlery. The **Black Country** surrounding the scattered coalpits of *Staffordshire* is the dreariest part of industrial England. The smoky towns are full of potteries and glassworks, and in many of the villages the women and children toil all day long making nails and chains. At **BIRMINGHAM** (490) pens, pins, buttons, screws, and jewellery are produced by the ton in infinite variety, not only for home use but for export to all parts of the globe. To the south **STRATFORD-ON-AVON** is honoured as the birthplace of Shakespeare. On the **coal-field** of **South Wales**, which produces the smokeless anthracite, the seaport of **CARDIFF** (100) has sprung up as a modern manufacturing town, the Great Western Railway from London reaching it by a tunnel  $4\frac{1}{2}$  miles long bored beneath the Severn.

**106. Towns of Southern or Agricultural England.**—Here the sleepy market towns and venerable cathedral cities, chief amongst which is **CANTERBURY** in *Kent*, the seat of the English

Primate, contrast with the dirty, noisy manufactories of the northern district. **BATH** is still a watering-place, as it was in the time of the Romans. The University cities, **OXFORD** and **CAMBRIDGE**, are full of stately old colleges. **LONDON** (4000) is the largest town in the world, the capital of the United Kingdom and centre of the British Empire, and as varied in its manufactures as it is rich in historical interest. **Westminster Abbey**, close to the Houses of Parliament, contains the tombs of many of the greatest men of the nation. **DOVER**, strongly fortified, stands on the line of white chalk cliffs which look across the channel to France. **BRIGHTON** (100) has become the fashionable seaside suburb of London, whence it is now distant only one hour by railway. **PORTSMOUTH** (130), on the south coast, is the greatest naval station in the world. Farther west come **SOUTHAMPTON**, a leading port for foreign trade opposite the Isle of Wight, and **PLYMOUTH**, another busy harbour and arsenal built on a beautiful sound, off which lies the famous Eddystone Rock and Lighthouse. **BRISTOL** (210) stands on the Bristol Channel, and though less important than it once was, carries on large manufactures of sugar and tobacco.

**107. Towns of Ireland.**—Ireland is still divided into four provinces, which were ancient kingdoms. With the exception of *Ulster*, it is inhabited chiefly by Roman Catholic Kelts, a humorous, light-hearted, impulsive race, much under the influence of their priests and political leaders. The country is healthier than England or Scotland, but the population has been steadily diminishing by emigration ever since the terrible famine of 1846, when the potato crop failed. *Ulster*, the northern province, is inhabited mainly by Protestants of Teutonic race, and is the industrial province, growing flax which is manufactured into linen at **BELFAST** (220). *Leinster*, the eastern province, contains **DUBLIN** (270), capital of Ireland, a fine town with an old University; its sea trade is now mainly done at **KINGSTOWN** Harbour, near the mouth of Dublin Bay. In *Munster*, the south-western province, **CORK** (100) stands at the head of a magnificent natural harbour, in which **QUEENSTOWN** is a mail station for Atlantic steamers going round the south of Ireland, the mail

being sent by rail from London to HOLYHEAD, in North Wales, thence by steamer across the Irish Sea to Kingstown (60 miles), and again by rail. Farther west are the lovely and much visited mountain lakes of Killarney. *Connaught*, in the north-west, is the grandest part of Ireland in its coast scenery, but the poorest in soil and climate, with few towns.

108. The **Isle of Man** bears on its coat of arms three running legs to symbolise the fact that it is equidistant from England, Scotland, and Ireland, and independent of all three. It has a little parliament, called the House of Keys, meeting in the town of DOUGLAS.



FIG. 3.—VIEW IN A NORWEGIAN FJORD.

## CHAPTER VI

### NORTH-WESTERN EUROPE

#### SCANDINAVIA.

**109. Configuration.**—The form of the Scandinavian Peninsula has been compared to a lion springing on its prey. The high plain of ancient crystalline rocks in the west has been worn into mountain masses by the long-continued action of rain, river, and ice. Those old rocks contain masses of the purest iron ore and valuable veins of copper and silver, but there is almost no coal in the peninsula. The loftiest and widest part of the high plain lies in the south-west, the head of the lion, where the



**Jotun fjeld**, or *Giant Mountains*, and the **Dovre fjeld** raise their summits to twice the height of Ben Nevis (8500 feet), and support on their rough rock-girdled platform the largest permanent snow-field in Europe, from which glaciers creep towards the coast. The **Sogne-fjord**, opening opposite the north of Shetland, sends its steep-walled branching valleys right into the heart of this region, 100 miles from the sea. A deep, narrow cleft cut by the river **Glommen**, flowing southward to the Skager-rak, separates the southern and northern parts of the high plain. The latter, called the **Kjolen** (*Keel*), becomes gradually lower and narrower towards the north. Its coast is trenched by fjords, at the upper ends of many of which are snow-fields and glaciers. Within the arctic circle the **Lofoten Islands** run like a jagged row of sharks' teeth northward along the coast, and the terrible tides of the West fjord, separating them from the mainland, produce the dreaded *Maelstrom* whirlpool. Here cod and haddock swarm in the winter months, and are fished for during the long arctic night. The streams of the west are short torrents which leap from the melting glaciers of the fjelds into the clefts of the fjords in magnificent waterfalls. The eastward slope of the peninsula is seamed by narrow valleys, in which rapid rivers run through chains of small lakes and pour into the Gulf of Bothnia. The low plain in the extreme south is broken by three great lakes. The western **Lake Wener** opens into the Kattegat (*i.e.* *Cat's throat*), the eastern **Lake Mälär** communicates through a maze of islets with the Baltic. **Lake Wetter** lies between them. Two low islands, **Öland** and **Gothland**, rise to the east; the town of **WISBY** on the latter, though now very small, was once the chief commercial city of the Baltic.

**110. Climate and Crops.**—On the western side there is a mild moist climate, but little soil and consequently almost no agriculture. The southern plain in the latitude of Scotland, although dry and extreme in climate, has good soil; crops of wheat, barley, and especially **oats**, are grown in abundance. The slopes of the high plains are clothed with dark **pine-forests**, which cover one-third of the surface of the peninsula, and their timber forms the chief wealth of the people.

**111. People.**—Scandinavia is the most thinly-peopled country in Europe. Around the coasts and in the south the people are Aryan **Teutons** of two distinct *Scandinavian* races, tall, fair-haired, and blue-eyed as a rule. By the nature of their country they have become sailors and fishermen, and being brave, persevering, and sober, are valued as seamen in the ships of all nations. Their **language** is not unlike German, but there are several forms of it. **Danish** is the language of the Norwegians in the west, and **Swedish** is spoken in the south and east. The **Finns**, although of the Yellow type, are a tall and intelligent race, but the **Lapps**, allied to them, are a little, squat, flat-nosed people, living by hunting, fishing, and rearing reindeer. The state **religion** is *Lutheran*, a reformed Episcopacy, which must be professed by all holding Government appointments. The people are well educated, elementary teaching being compulsory and free.

**112. History.**—The *Northmen* of the west (called *Vikings* from the viks or bays in which they lived) were of old fierce pirates, plundering all Europe in their "*long serpents*" or galleys, and often settling on the lands they conquered. Those on the east, the *Swedes*, were valiant soldiers, who were valued as mercenaries by foreign powers. At the end of the fourteenth century the Scandinavian peninsula and Denmark formed one kingdom; but in 1523 the south and east of the peninsula became independent with the name of **Sweden**, and its warlike kings conquered the southern and eastern shore of the Baltic. In 1815 the Congress of Vienna, which met to settle the geography of Europe after Napoleon's wars, made **Norway** independent of Denmark, and united it to Sweden, which had then lost all its territory outside the peninsula. Although these two countries are under one king, each has its own parliament and is quite independent.

#### NORWAY.

**113. NORWAY** (*Norge*, "the northern land"), on the west, is a little larger than the United Kingdom of Great Britain and Ireland, and is separated from Sweden by the eastern edge of the high plains.

The Norwegians are a democratic people, with no hereditary nobility, and the elected *Storting* or parliament has unusual power. There is a small army and navy, but a large fleet of merchant **ships**, principally sailing vessels, carrying the merchandise of other lands.

**114. Towns.**—The capital, **Christiania** (130), on the long fjord at the angle of the Skager-rak, was named from King Christian IV of Denmark, who rebuilt it after a great fire in 1624. There is a modern University with famous museums and observatories. **DRAMMEN**, 30 miles from the capital by rail, is a timber shipping port, and the Norwegian mint stands near it at the silver mines of **KONGSBERG**. **STAVANGER**, a port directly east of Kirkwall, in Orkney, is thronged by boats engaged all summer in the herring fishery; but **BERGEN**, 100 miles farther north, between the great fjords of Hardanger and Sogne, has more extensive fisheries, and is the greatest export harbour of Norway for **timber, fish, and ice**. Its brilliantly painted wooden houses are seldom soiled with dust, for a whole day without rain is somewhat rare. **THRONDJEM** (*Drontheim*), reached through the windings of its grand fjord, was long the capital, and has one of the finest cathedrals of northern Europe. A railway runs down the banks of the Glommen (for 290 miles) to Christiania, and another line traverses a pass eastward to Sweden. At the quaint wooden village of **HAMMERFEST** (70° N.), the northernmost town in Europe, the dreary winter night lasts three months without sight of the sun.

#### SWEDEN.

**115. SWEDEN** (*Sverige*, the country of the *Svears* or Swedes) has nearly  $1\frac{1}{2}$  times the area of the United Kingdom. The people, more aristocratic in their traditions than the Norwegians, have been termed, from their graceful manners, the *French of the North*. The country is divided into three districts: the agricultural region of *Gothland* in the south, *Svealand* or Sweden proper in the middle; both of these being low are netted over with railways, which also penetrate for some distance into the dark forests and barren moors of *Norrland* to the north.

Sweden has a considerable export trade in timber and wooden manufactures, amongst which **wood-paper** and **matches** are important.

**116. Towns.**—**GOTHENBURG** (*Goteborg*, 90), on the Skagerrak, at the entrance of the canal to the lakes, is situated due east of Inverness. It is the chief seaport of Sweden, trading largely with Britain and France. On the coast of the Sound, separating Sweden and Denmark, there are three important towns: **HELSINGBORG**, famous as the birthplace of the sixteenth century astronomer, Tycho Brahe, is near the only coal-mines of the peninsula. **LANDSKRONA** is a fortress commanding the Strait, and **MALMÖ**, with its artificial harbour opposite Copenhagen, is a railway ferry between the continent and Stockholm. It has succeeded to the prosperity once enjoyed by the quiet little University city of **LUND**, a few miles inland. **KARLSKRONA**, planted where the coast turns northward, is one of the strongest fortresses on the Baltic, and the headquarters of the Swedish navy. The manufactures of **NORRKÖPING** (*the Northern Market*), on a narrow inlet of the east coast, at one opening of the Gota Canal to the lakes, have earned for it the name of the *Scandinavian Manchester*. On one of the islets at the outlet of Lake Mälär, **Stockholm** was founded in the thirteenth century as the capital, and now the stately streets and graceful spires of this "*Venice of the North*" rise from more than forty islands, while parks and suburbs stretch far over the mainland. Although the harbour is closed by ice for a third of the year, there are active manufactures, and it holds a population of 220,000. **UPSALA**, 45 miles north of the capital, on one of the branches of the Mälär Lake, contains an ancient and celebrated University, where Linnæus, the founder of modern Natural History, was a professor. The chief **ironworks**, using charcoal instead of coal, are centred at **DANNEMORA**, 25 miles to the north. **GEFLE**, a timber port on the Gulf of Bothnia still farther north, has a railway due west to the copper works of **FAHLUN**. A railway within the arctic circle from the Ofoten fjord in Norway has now been constructed to pass the rich iron mines of **GELLIVERA** and join the Swedish system.

## DENMARK.

**117. DENMARK** (*Danemark*).—The little peninsula of Jutland projects northward, unlike the other European peninsulas, into the angle between Norway and Sweden. It lies opposite to that part of the coast of Great Britain extending from Flamborough Head to Kinnaird Head. On the west its coast of unbroken sand-banks, backed by dreary dunes, is dreaded and avoided by sailors; in the east the land is hilly, although the highest summit is not 600 feet above the sea. The soil there is generally fertile. Luxuriant **beech-woods** fill the valleys, and the **grass** is particularly fine, feeding celebrated breeds of **cattle** and **horses**. Dairy produce, especially Danish **butter**, is largely exported. The promontory of the Skaw or *Skagen* gives its name to the Skager-rak, which it separates from the Kattegat. The entrance of the Baltic is divided by islands into three channels, the tortuous and shallow **Little Belt** between Jutland and Fünen, the deep **Great Belt** between Fünen and the largest island Zealand, and the narrow but most frequented **Sound** close to the shores of Sweden. Although Denmark holds this triple key to the Baltic, her three powerful neighbours—Germany, Russia, and the United Kingdom—prevent her from exercising any real control in times of war. Jutland and the neighbouring islands are overspread with railways. The solid granite parallelogram of **Bornholm**, bearing one of the most important lighthouses of the Baltic, belongs to Denmark. The more distant possessions of this little country includes the **Farøe Isles** and **Iceland** in the North Atlantic, the coast settlements of **Greenland** and **St. Thomas**, **St. John**, and **Santa Cruz** in the West Indies.

**118. People.**—The kingdom of Denmark, after losing Norway and Sweden, included all Jutland and the islands; but in 1866 the southern provinces of *Schleswig-Holstein* were seized by Prussia, and Denmark is now only one-ninth the size of the United Kingdom. The Danes, a Teutonic people, are good sailors and skilful farmers, well educated, and progressive. They

follow the Lutheran form of worship, and are governed by two elected houses of parliament under a king.

**119. Towns.**—The capital, **Copenhagen** (280), is well named in Danish *Kjøbenhavn*, “merchant’s harbour,” and is beautifully situated; its ancient University, palaces, museums, and the memorial of the great sculptor Thorwaldsen, filled with his choicest works, being remarkable buildings. **ODENSE**, “the town of Odin,” in *Fünen*, was the birthplace of Hans Christian Andersen, whose “fairy tales” are so well known. **AALBORG** and **AARHUS**, two ports of the peninsula on the Kattegat, export the cattle and grain of the fertile eastern district. **ELSNÖRE** (*Helsingör*), where Nelson won the Battle of the Baltic, is more famous as the scene of Shakespeare’s *Hamlet*.

**120. The Farøe Islands.**—A wild group of more than twenty mist-swept basaltic crags, worn with deep straight valleys and separated by narrow gorges, rise in 60° N. from the centre of the submarine ridge which connects Scotland and Iceland. The only town is **THORSHAVN** (*harbour of Thor*). The people are adventurous fishermen, managing their rowing boats in tumultuous tidal streams or *roosts* that few others could face, and scaling the nearly perpendicular cliffs for sea-birds and their eggs. The Gulf Stream which strands much-needed drift-wood on these treeless islands, makes the climate so mild that grass grows all the year round, and sheep fed there have given their name of *Farøe*, or “sheep islands,” to the group.

**121. Iceland** (in Danish, *Island*, which simply means an island) just touches the arctic circle; and its lofty plains and mountains are always snow-covered, a fact which no doubt suggested the English spelling of the name. The form of the island on the map, suggestive of an old Norse galley, with carved crest and projecting beaks, steering westward to America, may serve to fix in our memory the fact that the Norwegians colonised Iceland 1000 years ago, and in their westward cruises from it were carried to the shores of the New World centuries before Columbus. The island, one quarter larger than Ireland, is crossed by longitude 20° W., and lies 500 miles north-west of Scotland, whence mail steamers sail regularly in summer. The people, numbering

only 70,000, retain the old Norse language in great purity, and have a parliament of their own under the Danish king. Although the high plains of the interior are barren and ice-covered, the island has long been celebrated for its "burning mountains" and geysers or eruptive hot springs. The most noted volcano, **Mount Hecla** (5000 feet), in the south, has given rise to stupendous eruptions, the fine dust and ashes sent out by it having sometimes been carried by the wind as far as Scotland and Norway. This land of snow and fire is washed on the north-west by the ice-laden **Greenland current**, which carries stray logs of wood from the rivers of Siberia. On the south coast the **Gulf Stream** drift softens the climate; but meeting with the colder water gives rise to frequent fogs, hence the name of the one little town **REYKJAVIK**, the *smoky or foggy bay*. Thousands of small shaggy ponies and sheep are exported every year. There is practically no agriculture, but the **cod fisheries**, like those on the Banks of Newfoundland, employ many natives, and attract numbers of foreign fishermen, mainly from France.

## HOLLAND.

**122. Boundaries.**—The kingdom of the **NETHERLANDS** (or **HOLLAND**), little more than one-tenth the area of the United Kingdom, occupies the western extremity of the European plain, lying opposite the coast of England from the Thames to the Wash. The **western boundary** is a row of sand dunes and strong artificial dykes, faced with Scandinavian granite. These keep out the water of the North Sea from the hollow land forming the provinces of *Zealand* and *Holland*, which comprise nearly half the kingdom, and lie, on the average, 30 feet below sea-level. In the north the **Frisian Islands** are remnants of a barrier where the sea broke through in the thirteenth century, forming the shallow **Zuider Zee**, *i.e.* *South Sea*. The **eastern boundary**, from Prussia, runs over an undulating, heathery moor, with great stretches of peat-moss, that are gradually being drained and planted with fir-trees. The **southern frontier**, to Belgium, curves northward parallel to the **Maas**.

**123. Surface and Rivers.**—Deposits of mud and clay, carried by rivers from the Alps, the Ardennes, and by the glaciers of the ice-age from Scandinavia, cover up all the hard rocks under one monotonous flat expanse. Numerous branches, thrown off by the Rhine and the Maas (*Meuse*), traverse the land in channels embanked high above the surrounding fields. The climate is raw and foggy, more continental than that of England, and unsuitable for ripening grain. The rivers and the far more numerous canals are frozen every winter, when skating



FIG. 4.—A SCENE IN HOLLAND.

almost takes the place of walking in many districts. Grass grows in great luxuriance, cattle-rearing, dairy-farming, and the manufacture of butter and margarine are the national industries. It is difficult to get foundations for either railways or houses; the buildings erected on piles driven into the deep soft soil do not remain long perpendicular, and even the solid stone buttresses of the magnificent railway bridges which span the Rhine and Maas, are cracked and twisted by their foundations yielding. Little steamers or boats, towed by horses, ply as omnibuses, and carry passengers between the



towns. The sunk provinces are divided into water-tight compartments, called **polders** (or pool places), and rows of tall, long-armed **windmills**, catching the steady breezes blowing over the flat land, pump up the water day and night into the <sup>\*</sup>canals. Great, fat, sleepy, black and white cows look up from the rich damp grass in which they feed to the steamers gliding on to the sea. The safety of Holland depends on the **dykes** or sea-walls, which are maintained with great care and at enormous cost ; even the storks, which devour boring insects and worms, are protected by law.

**124. People.**—The people who, like the Germans, call themselves *Dutch*, belong to the Teutonic race. They are stolid, serious, and dull, but persevering, steady, and patriotic. Cleanliness is their great characteristic ; houses, pavements, and sometimes even trees being scrubbed every day. The spirit of quiet and neatness seems to possess the land, even the large towns are not noisy, all heavy traffic passing silently on the canals. The population is densest (over 500 to the square mile) in the provinces lying below sea-level, where commercial activity and dairy-farming are concentrated. From their position at the mouth of the Rhine and their extensive colonial possessions (§§ 271-279) the Netherlands have always been great in **commerce**, and their merchants supply most of the *colonial produce*—coffee, tea, tobacco, spices, etc.—for northern Europe.

**125. History.**—Holland and Belgium were Spanish provinces at the time of the Reformation ; but the Dutch became Protestants, and after a heroic struggle gained their independence ; whilst the Belgians remained Catholic, and passed under Austrian control. In 1815 the Congress of Vienna created a *Kingdom of the Netherlands*, including Belgium and Holland ; this unnatural union lasted only fifteen years, when Belgium became independent. The Dutch **government** is a democratic monarchy. The prevailing form of **religion** is Presbyterian, but all denominations receive aid from the State. Education is generally neglected, except in the towns.

**126. Towns.**—The chief town is **AMSTERDAM** (*the Dam or Dyke of the Amstel*, 380), at the south of the Zuider Zee,

built on ninety little islands, which are linked by 300 bridges. A canal running due west to an artificial harbour on the North Sea admits the largest steamers. **Diamond cutting**, carried on mainly by Jews, is a characteristic industry; and the town is celebrated as the birthplace of the philosopher Spinoza, and the home of the great painter Rembrandt. Near HAARLEM, to the west, in the centre of flower gardens, where tulips, hyacinths, and other plants are grown for export, 16,000 people live on the rich grass-land that formed the bottom of *Haarlem Lake* until 1853, when it was pumped dry. In UTRECHT, on a branch of the Rhine, is the University where Grotius taught. The more famous University of LEYDEN, farther down the same river, was founded in 1574 to commemorate the siege in which the invading Spaniards were defeated by flooding the surrounding country. *The Hague* (*S'Gravenhaage*, i.e. the count's park) is the political capital, where the King resides. A railway thence runs past DELFT, from the potteries of which delf ware was named, and SCHIEDAM, where distilleries are at work preparing the spirit called **gin** or *Hollands*, to ROTTERDAM (190), on the Maas. This is the chief commercial town for trade with Germany up the Rhine, and seawards with Britain, America, and the far East. **Pine rafts**, floated down from the Black Forest, supply material for shipbuilding. Here Erasmus was born. At FLUSHING (*Vlissingen*), on the estuary of the Scheldt in the south, mail steamers from Queenborough, in England, connect with the express trains to Berlin. Few important towns stand above sea-level. At MAASTRICHT, in the extreme south-east, a little strip of the kingdom lies between Aix-la-Chapelle and the Maas; it contains a hill of 600 feet in height, one or two small coal-mines, and a labyrinthine **stone quarry**, worked in the heart of the St. Petersberg, a little hill of solid rock.

#### LUXEMBURG.

127. The Grand-duchy of **LUXEMBURG**, of which the King of the Netherlands is Grand-duke, lies between Belgium, France, and Germany. Politically, it is Dutch, commercially it,

belongs to the German *Zollverein*, and the money used is that of France. Its one town, **LUXEMBURG**, was a fortress, but the walls were destroyed in 1867, when the great powers guaranteed the perpetual neutrality of the little state in case of war.

### BELGIUM.

**128. BELGIUM** (named from the original *Belyae*, a Keltic tribe, conquered and described by Julius Cæsar) is a little smaller than Holland, and stretches to the south of that country in the form of a crescent. A flat coast strip, bordering the North Sea, merges into rising land on the south and east, where the high plain and hills of the **Ardennes** rise above 2000 feet on the French frontier, and meet the Eifel at the short boundary line from Germany. The old rocks of this high region are succeeded to the north by a strip of coal-bearing strata which runs from north Germany into France, and this in turn by a soil of clay and sand like that of Holland. The **Scheldt** (*Escant*), flowing over the low ground on the west, enters a sandy estuary opening between the Dutch Islands of Zealand right opposite the Thames. The **Maas** or **Meuse**, with its tributary the **Sambre**, flows northward in a deep valley with narrow gorges and enters Holland on the east. The climate, milder than that of Holland on the coast, is more extreme, and on the average colder on the high plains.

**129. People and Trade.**—Small though the country is, the people belong to at least two races: the **Walloons**, living in the highlands of the east and south, are of Keltic origin, although now speaking a dialect of French; while the more numerous **Flemings**, in the lowlands of the west and north, are a Teutonic people, speaking a language allied to Dutch. Since the formation of the kingdom in 1830 the official language has been French, and the religion remains Roman Catholic. The Belgians smoke more tobacco per head than any other nation. The population is the densest of any European state (520 to the square mile). The people are mainly employed in mining coal, iron, and zinc, in manufactures of various kinds, and in the laborious

culture of the poor soil, from which, by great manuring, good crops of grain, beetroot, and flax are raised. Education has been much neglected, but in other respects the contrast with Holland is complete. Poverty is widespread; in the south the land is blackened with furnace smoke, and resounds to the clang of machinery and the rush of trains; while in the northern plain of Flanders dozens of decayed towns bear evidence, in their noble town halls and belfries, of the greater population, wealth, and



FIG. 5.—TOWN OF THE BELGIAN BLACK COUNTRY. (Compare Fig. 4).

splendour they possessed in the Middle Ages. Canals intersect the country in all directions, and communicate with those of France and Holland; the railway system is as complete as in England, and travelling is cheaper than anywhere else.

Belgium has often been the battlefield of Europe. In the very centre of the kingdom lies the field of Waterloo, where, in 1815, the Duke of Wellington, with the allied armies of Britain and Prussia, finally destroyed the power of Napoleon and pacified Europe.

130. Towns.—Brussels (*Bruxelles*; 440), in the centre of the

kingdom, claims to be a miniature Paris from the magnificence of its public buildings and the fashion and gaiety of its inhabitants. It is the commercial and railway centre. A railway runs north to ANTWERP (*Anvers*, 200), which is one of the strongest fortresses, and at the same time one of the busiest mercantile harbours in Europe. The cathedral is remarkable, even amongst the stately buildings of Flanders, and contains some of the masterpieces of the painter Rubens, who, like Van Dyck, was a native of the town. The main line, west from Brussels, passes through GHENT (*Gand*, 150) at the limit of tide on the Scheldt, the chief cotton manufacturing town of the kingdom; and BRUGES (named from its many *bridges*), which was, once greater than Antwerp, though now many of its streets stand almost deserted, to OSTENDE, a fashionable watering-place and railway harbour on the North Sea opposite Deal. The main line, to the east, passes LOUVAIN, the seat of one of the chief Roman Catholic universities in Europe, and goes on through LIEGE (*Lüttich*, 140), on the Maas, where the **fire-arm factories** turn out more weapons than those of any other town, to VERVIERS, a leading continental cloth market, and Aix-la-Chapelle. NAMUR, at the junction of the Meuse and Sambre, CHARLEROI, on the latter river, and MONS, near the French frontier, are the chief links in a chain of smoky towns, where live the workers in the industrial hive of **mines, iron-furnaces, and glass-works** which covers the coal-field. In this district the coalpits are the deepest and most difficult to work in the world. TOURNAY (*Doornik*), the most ancient town in Belgium, with a belfry built in the twelfth century, and COURTRAY (*Kortryk*), scarcely less venerable, but now important for its **linen** woven from the wonderfully fine flax of the neighbourhood, are situated near the French frontier toward the west.



FIG. 6.—VIEW ON THE TAGUS AT LISBON.

## CHAPTER VII

### SOUTH-WESTERN EUROPE

#### FRANCE.

131. **Form and Boundaries.**—**FRANCE** has an irregular six-sided shape on the map. A line drawn from **DUNKIRK** in lat.  $51^{\circ}$  N., due east of Dover, to the island of Ushant, the most westerly point (long.  $5^{\circ}$  W. due south of Falmouth), passes through Cape la Hague, on the north-pointing peninsula of *Normandy*. The second side of the hexagon crosses the Bay of Biscay to **BAYONNE**, at the base of the *Pirenees*; the third runs along this mountain chain, which separates France from Spain, in lat.  $43^{\circ}$  N.; the fourth crosses the stormy Mediterranean Gulf of Lions to Mentone; the fifth touches the Alpine frontiers of Italy, Switzerland, and Germany; and the sixth crosses from Mount Donon in long.  $7^{\circ}$  E., past Luxemburg and

Belgium to Dunkirk again. The area is about  $1\frac{1}{2}$  times that of the United Kingdom.

**132. Surface and Rivers.**—A high plain in the south-east, formerly the province of *Auvergne*, is like the Eifel (§ 165), covered with conical hills marking extinct volcanoes. To the east it dips down abruptly in a range of heights, the **Cevennes**, facing the parallel ranges of the forest-clothed **Jura** and the western Alps. The river **Rhone** (*i.e. rapid*) flows swiftly westward from Switzerland, turns abruptly southward where the **Saone** joins it, and sweeps along the base of the Cevennes to a delta on the Mediterranean. To the west and north the land slopes gently into a low plain, over which three great rivers flow. In the south the **Garonne** and **Dordogne** unite and flow north-westward as a wide estuary, the *Gironde*, to the Bay of Biscay. The coast is lined by tracts of sand, the **landes** of Gascony, with dunes shutting in innumerable narrow lakes or lagoons. This region is so subject to floods that the shepherds of the district follow their flocks on stilts. Beyond a boundary ridge of limestone hills to the north the central basin of the **Loire** collects five rivers into one channel, which traverses the ancient hard rocks of *Brittany* to the sea. The **Seine** (*i.e. tranquil*) winds gently westward over the nearly level plain, receiving tributaries as it flows, and widens into an estuary on the English Channel.

**133. Minerals.**—French *Flanders* contains the west end of the coal-field which stretches from Belgium into France—half the coal produced in the country is raised here, and the iron-ore found with it makes this an active manufacturing region. The small coal and iron-field of the *Loire*, high up in the central high plain, comes second, and twenty other little patches of coal are scattered over the land; but unfortunately the richest iron mines are far from any fuel in the valley of the Moselle, on the north-eastern frontier. Lead occurs in the granite of *Auvergne*. Salt is found in the Pyrenees and in the Alps, but large quantities of this substance are obtained during the hot summer, when the sun evaporates sea-water in shallow ponds round the coast.

**134. Climate and Crops.**—The west of France enjoys mild

winters and cool summers, during which a good deal of rain falls; the south coast, protected by the Alps and the Cevennes, is much warmer and drier. The centre of the country is cold on account of its elevation, and the rainfall diminishes towards the east, where the climate becomes quite continental. The warm Mediterranean coast is clothed with **maize** fields, and groves of the oil-yielding **olive** and of mulberry trees, on which **silkworms** feed. The **vine** is everywhere the most important plant, except in the damp north-west and the cold centre. France still remains the chief wine-making country of the world, although the production has been reduced to one-third of what it once was, by the attacks of an insect pest, the *phylloxera*. The great agricultural region is the north; **wheat**, in which France ranks next to the United States, and **beetroot** for sugar-making being the chief crops. As the French burn wood instead of coal in their houses, the **forests** are carefully preserved, and new woods are always being planted. On the thin soil of the high plain the only crop is **rye**, but the grass there pastures large flocks of sheep.

**Oxen** are much used for farm work in France, and in the south **donkeys** and mules are commoner than horses. A few brown **bears** still prowl through the rocky forests of the Pyrenees; while **wolves** and **wild boars** are not rare in the wild woods of the Ardennes and the Vosges.

**135. History.**—A non-Aryan race, the Iberians or **Basques**, still live in the western Pyrenees, but the bulk of the nation is **Keltic**, though largely intermingled with German and Scandinavian Teutons in the north (where *Normandy* was named after the invading Northmen), and with Romans in the south, whose Latin speech has been gradually changed into modern **French**. For centuries the land was divided amongst independent duchies and small kingdoms, but gradually by many wars and treaties these all became provinces of one large kingdom about the sixteenth century. At the great revolution of 1793, when the people overthrew the monarchy and set up the first Republic, amongst other changes, the thirty-four old provinces were superseded by eighty-six nearly equal departments, corresponding to



British counties. In 1804 the President of the Republic, Napoleon Bonaparte, assumed the title of **Emperor**, and in the course of ten years, after wars with every power in Europe, he conquered and reigned over them all except the United Kingdom, Russia, and parts of Austria and Prussia. In 1815, after the decisive battle of Waterloo, the realm of France returned to its previous size, but the rocky island of *Corsica*, where Napoleon was born, was allowed to remain French.

Revolutions in 1830 and in 1848 drove two successive kings from the throne, and led to the temporary establishment of a Republic. Louis Napoleon, who had become President of the Republic, followed the example of his uncle, the great Napoleon, and in 1852 proclaimed himself Emperor of the French. In 1860 two departments, *Nice* and *Savoy*, including the majestic Mont Blanc, were given to France by Italy as a return for aid in their fight for freedom from the domination of Austria. But in 1870, after a fierce war with Prussia, *Alsace* and *Lorraine* were taken from France, and the people, dethroning Napoleon, declared a new Republic, which still continues. The French Republic includes as part of its domains the great African possession of Algeria (§§ 532-534), as well as some important colonies in Asia (§ 268) and South America (§ 506).

**136. People.**—The people are as a whole polite and obliging, highly intelligent, and also gay and fond of pleasure. Although excitable and impulsive in their actions, they are brave and enterprising. Their manufactures are distinguished by a taste and finish attained by no other nation. The prevailing religion is Roman Catholic, but all churches are aided by grants from the State in proportion to the number of members. **Education** was long neglected, but is now well looked after. All able-bodied men are obliged to serve in the army, the number required every year being drawn by lot (*conscription*).

**137. Commercial Position.**—France has good harbours, which have been artificially deepened, on the English Channel, on the Atlantic shore, and on the Mediterranean. It has many navigable rivers, united by a magnificent system of canals; and railways running into five neighbouring countries. Thus it is

most favourably situated for commerce, and in the amount of its trade, comes third in the world, very close after Germany, though a long way behind the United Kingdom.

**138. Paris.**—In spite of their diversity of origin, appearance and taste, the French form a nation enthusiastically one in all matters affecting their “beautiful France,” and Paris, with its 2½ million inhabitants, is the very soul of the nation—the political, commercial, and social centre of the country. The fashions of Paris in dress and manners are followed in all civilised countries, and the city itself is the favourite residence of pleasure-seekers from every land. The site is flat, and the Seine, which flows through the city, is navigable by barges and river-steamers from the sea. The cathedral of *Notre Dame*, which formed the centre of old Paris, still rises above the Seine as one of the most imposing buildings in the city, and almost as fresh as when it was built 600 years ago. The museum of the *Louvre*, containing one of the finest collections of pictures and statues in the world, stands open to the public, the University is unsurpassed in Europe, the magnificent theatres are endowed like the churches by the State, the broad and smoothly asphalted boulevards shaded by trees and lined with open-air *cafés* are thronged by gay crowds all the year round. A huge iron structure, the *Eiffel Tower*, has been erected for the Paris Exhibition in 1889; it is the highest building in the world, its summit being 1000 feet above the ground. A strong wall and deep trench entirely surround the city, and beyond them rings of closely planted forts, with heavy cannon, extend lines of defence through the surrounding suburbs and public gardens. *VERSAILLES*, not far distant, with its palaces and parks now preserved as show places, is surpassed in its magnificence by none of the royal dwellings in Europe.

The railways pass out between the forts and radiate in all directions. The lines of various companies do not interlace as in England, but each “iron road” (*chemin d. fer*) spreads over a special section of the land.

**139. Towns on the Northern Railway.**—The *Northern Railway* traverses the old provinces of *Picardy*, *Artois*, and *French Flanders*, where *Crecy*, *Agincourt*, and many other famous

battles were fought. AMIENS, with its fine cathedral, stands midway between Paris and the two ports, BOULOGNE and CALAIS, which carry on active trade across the narrow but stormy Strait of Dover; the latter is interesting as the last French town that belonged to England. A railway tunnel under the Strait to Dover (21 miles) has been planned and commenced, but is not likely to be finished. The once important CAMBRAI gave its name to *cambric*, a fine kind of linen; ARRAS (the birthplace of Robespierre the tyrant of the Great Revolution) to arras tapestry, but these towns are now insignificant. VALENCIENNES, after which a fine kind of lace is called, remains, like its neighbouring town LILLE (190), a strong fortress on the Belgian frontier, and a centre of linen and cotton weaving. ROUBAIX (100) has grown important through woollen weaving.

**140. Towns on the Western Railway.**—One line of the *Western Railway* system follows the Seine to ROUEN (110), the *Manchester of France* in cotton spinning, and eminent also for the beauty of its ancient buildings, in the shadow of which Joan of Arc was burnt by the English. HAVRE, an equally large, but modern commercial town at the mouth of the river, has fine docks always thronged by shipping from England and America. CHERBOURG, at the extremity of *Normandy*, opposite the British naval station Portsmouth, and BREST, at the point of the rough peninsula of *Brittany*, curiously resembling that of the English Cornwall, are strongly built fortresses protecting deep artificial harbours, where the war fleets of France lie safely.

**141. Towns on the South-Western Railways.**—The *Paris and Orleans Railway*, together with lines worked by the State, runs along the Loire from ORLEANS, a place full of historical memories, through the pleasant and intellectual town of TOURS, and ANGERS, capital of the old province of *Anjou*, to NANTES (130), a commercial seaport. An edict tolerating Protestants was published here in 1598, and revoked 100 years later, when thousands of the best workmen of France were driven to other countries, leaving towns ruined that have never revived, but bringing new manufacturing power to their adopted homes. This railway system extends over the rich wine-producing dis-

tricts of the departments of *Charente*, the brandy distilled from the wine being called after the little town of COGNAC. But hundreds of vineyards have been destroyed by the phylloxera, and the wine and brandy industry has been seriously impaired. LIMOGES, on the western slope of the *Auvergne* high plain, has always had potteries, where porcelain is made from the decayed granites of the district. At the great seaport of BORDEAUX (240), on the Garonne, where wine made from the grapes of *Medoc* and other districts bordering the river is exported, there is a junction with the *Southern Railway* which forms a wide network over what was formerly the province of *Guyenne*. The half-way city of TOULOUSE (150) flourishes on the trade by rail and canal carried along the valley of the Garonne between the Atlantic and Mediterranean.

**142. Towns on the South-Eastern Railways.**—The *Paris, Lyons, and Mediterranean Railway*, occupying the whole south-east of France, sends one line up the steep valley of the Loire and across *Auvergne* by many picturesque health resorts and manufacturing towns, including the fashionable VICHY, to NIMES, in the wine department of *Herauld*, and MONTPELLIER, where the Arabs founded a university. The main line, one of the most important leaving Paris, carries the British Indian mails for Brindisi through DIJON, once the capital of *Burgundy*, and MACON, both noted wine towns, to the Mont Cenis tunnel, which, with a length of 7 miles, pierces the chain of the Alps and carries the line into Italy. LYONS (400), the second town in France for population, and the first in the world for silk weaving (drawing its coal and iron supply from ST. ETIENNE (120), on the *Loire* field), and AVIGNON, which belonged to the Pope until the great revolution, lie in the Rhone valley. They are on the line from Paris to MARSEILLES (the ancient *Massilia*, 380), now the most crowded of all French seaports, especially by vessels trading with the Mediterranean, India, and Australia. A short distance to the east the good natural harbour of TOLON has been fortified as a great naval stronghold. CANNES, NICE, and MENTONE, close to the Italian frontier, are sea-coast towns prized by invalids for their genial winter climate.

**143. Towns on the Eastern Railway.**—The *Eastern Railway* system traverses the fields of *Champagne*, the famous sparkling wine of that name being manufactured in CHALONS, EPERNAY, and many other towns of the district. REIMS (100), in addition to its wine trade, is known for its gorgeous Gothic cathedral, wherein for centuries the French kings were crowned. A fine fortress, BELFORT, guards the valley between the Jura and Vosges Mountains, where the railways enter the German territory of Alsace. It was at SEDAN, a little town on the north-eastern frontier, that Napoleon III surrendered himself and his army to the Germans in 1870.

#### ANDORRA.

**144. ANDORRA**, a wooded valley high up on the southern slope of the Pyrenees, is a republic peopled by a few free and hard-working mountaineers of Spanish race and language. The largest village, which is the capital, with less than 1000 inhabitants, contains one-tenth of the population of the little country. The French Republic and the bishop of a neighbouring Spanish diocese, both exercise a kind of supervision of the government, and each receives about £40 a year as tribute.

#### MONACO.

**145.** A bold rocky headland rising up in cliffs from the Mediterranean between Nice and Mentone, is crowned by the small and picturesque city of MONACO, the remnant of an independent state, and still governed by a prince, who is an absolute monarch, under the protection of France. Gambling tables, which are prohibited in other countries of Europe, bring wealth to the little principality and ruin to hundreds of the pleasure-seekers who crowd the beautiful halls and gardens of *Monte Carlo*. Even here public gambling, though encouraged in foreigners, is prohibited by law to the natives.

#### THE IBERIAN PENINSULA.

**146. Form, Surface, and Rivers.**—The people living in this south-western angle of Eurasia, with whom bull-fights are a

favourite amusement, have compared the ragged square outline of the peninsula to a great bull-hide, the neck at Gibraltar, stretched out to dry. It is a high plain over 2000 feet above sea-level, edged by the lofty buttresses of the **Cantabrian Range** and **Pyrenees** in the north, and the **Sierra Nevada** (literally the *snowy saw-like ridge*) along the southern coast. These are joined by a mountainous belt along the east coast, from which short torrents flow to the Mediterranean. In the north one large river, the **Ebro**, flowing eastward across a narrow low plain at the base of the Pyrenees, cuts a deep gorge through the **East Coast Range** to the sea. Westward the high plain slopes gradually, and four great rivers flow across it, their basins separated by three parallel mountain ranges stretching from the East Coast Range, and spreading out to form a similar but lower and more broken range along the western shore. The **Castilian Range**, a row of Sierras running south-westward to Cape Roca, separates the wide basin of the **Douro** on the north from the narrow valley of the **Tagus** (*Têjo*). The latter is walled in on the south by the low **Toledo Range**, along the southern edge of which flows the **Gaudiana River**, that turns abruptly southward 120 miles from its mouth. The wide, low **Sierra Morena** (or *dark saw-edge*) slopes southward to the large, low plain of *Andalusia*, down which the Guadalquivir meanders at the base of the long slope of the Sierra Nevada.

**147. Minerals.**—Most of the rocks of the peninsula belong to the old crystalline series; the mountain scenery is bare and rugged in consequence, but coal-bearing strata are also found, and although the soil is poor, except in the river valleys, the land is rich in metals. **Iron-ore** is extensively mined on the north slope of the Cantabrian Range; the liquid metal **mercury**, or *quicksilver*, occurs at **ALMADEN** in the Sierra Morena; **lead** and **silver** have been produced for ages in the south-east, **tin** and **zinc** in the north-west, and in the south-west the Coloured River (*Rio Tinto*) is named from the effect of the copper ores it flows over on the appearance of its water.

**148. Climate and Crops.**—The climate along the north and west coast is wet and mild. The interior and the east coast

receive very little rain, and the high plains of the centre have a purely continental climate of bitterly cold winters, and summers so hot that every blade of grass is withered up. Along the south coast, and in the broad plain of *Andalusia*, warm, clear weather prevails all the year round. Cotton and sugar-canes grow strongly on the fertile soil, fields of maize wave in the intense sunlight, and groves of orange trees surround the towns. The olive, vine, and mulberry flourish on all the coast lands, oil, wine, and silk being largely cultivated, but the cork-oak, the bark of which supplies the cork of commerce, is the most characteristic.

**149. History.**—The *Basques*, more numerous on the Spanish side of the French border, are descendants of the original inhabitants who were driven into this mountainous corner by *Kelts*, who were in turn mastered by the *Romans* after a gallant struggle, but so thoroughly that the two prevailing languages of the peninsula, *Portuguese* and *Castilian* (improperly called Spanish), are only modifications of the Latin tongue spoken by the Romans. When the Roman empire fell, tribes of *Teutons* from the north conquered the country; but before long a more determined invasion of *Arabs* or *Moors*, from northern Africa, brought the whole peninsula under Mohammedan rule. During the early Middle Ages the Arabs made Spain the most civilised country in Europe, founding great universities, building splendid palaces, and cultivating the land to a high degree. But the Christian people of Spain gathering amongst the northern mountains gradually drove the Moors southward; and in the fifteenth century the kingdoms of *Navarre* in the north, *Aragon* in the north-east, *Castile* in the centre (named from the strong castles guarding its frontiers), and *Portugal* in the west, were in the hands of Christians, and only *Granada* in the south remained Moorish. In the sixteenth century the Moors were finally expelled, although their language, customs, and race have deeply affected the present population. The common river-name *Guadi*, for instance, is the Arabic name *Wady*, so common in Arabia and Egypt. The five kingdoms were united under a King of Spain, and when enriched with the treasure of newly found

America, became the chief power of Europe; but *Portugal* ultimately resumed its independence. In the beginning of this century Wellington, in the course of the famous **Peninsular War**, drove out the invading French armies after a series of great battles fought with a heroism that still reflects glory on the names of *Talavera*, *Ciudad Rodrigo*, *Salamanca*, and *Vittoria*, stretching in one long chain of victory from Portugal to the Pyrenees.

#### PORTUGAL.

**150. PORTUGAL** (the *Lusitania* of the Romans) occupies a strip of the west coast, about 100 miles wide, stretching southward from lat. 42° N., the south-flowing Guadiana forming part of its boundary from Spain. Its area is about one-third that of the United Kingdom, and being well watered by the Atlantic rains, its surface is thickly wooded. Wine and cork are the most important products, and their cultivation and manufacture occupy most of the people. The Portuguese are a short and rather ill-favoured race, speaking an unpleasant harsh language. Like the Spaniards they are Roman Catholic in religion, and their education is greatly neglected. Their foreign possessions in Africa are large, but badly managed. The Portuguese islands of the **Azores** (*i.e. Hawk Islands*) in mid-Atlantic were long the westernmost outposts of the known world. Off the coast of Marocco, **Madeira**, a delightful health resort, received its name from forests burnt down long ago, and gave it to the wine which is still made there and exported.

**151. Towns.**—The capital **Lisbon** (*Lisboa*, 250) rises in terraces round a splendid harbour on the wide estuary of the Tagus. A railway up the Tagus valley runs to Madrid in Spain. Another passes along the coast northward, but the country is poorly provided with roads. The harbour has still extensive trade, but for many years after Vasco de Gama discovered the Cape route to India, and when the world of America was yet new, it was the greatest seaport in the world. A terrible earthquake in 1755 destroyed the entire town, 60,000 persons perishing in the ruins of their houses, and so Lisbon has no ancient buildings. Towards the north the Douro traverses a district rich in



vineyards, with a sea outlet at OPORTO (100), which gives the name of **Port** to the kind of wine exported thence. Formerly the harbour was called *Porto-Cales*, from which the name Portugal itself was derived. COIMBRA, midway between Oporto and Lisbon at the mouth of a picturesque valley fronting the Atlantic, the beauty of which inspired the great poet Camoëns, receives the heaviest rainfall in Europe.

### SPAIN.

**152. SPAIN** (*España*) is  $1\frac{1}{2}$  times the size of the United Kingdom, and has a fine situation for sea-trade, as there are good harbours both on the Atlantic and Mediterranean. But the Spaniards, spoilt by their prosperity after the discovery of America, have become lazy, and though still as temperate, grave, and haughty as their ancestors, and brave beyond most people in war, they see with little concern the commerce of their ports carried on by British ships, and most of the trade in the hands of foreign merchants. The number of half-wild gipsies or *gitanos* in many of the towns is remarkable. The religion is Roman Catholic, and although the Inquisition or "Holy Office" has been abolished, the few Protestants of the country are even yet barely tolerated. Education is so much neglected, in spite of laws making it compulsory, that not half the grown-up population are able to read.

**153. Products.**—Agriculture is the chief resource of the people, but is carried on in a wasteful and careless way, except in fertile *Andalusia*, and in the naturally sterile eastern provinces, where splendid canals, built by the learned and practical Arabs hundreds of years ago, still water luxuriant *huertas* or gardens. Vine-growing and wine-making supply the chief exports, especially since the phylloxera plague in France increased the demand. Fruits, such as oranges, citrons, figs, and olives, come next; ores of copper, lead, and iron take the third place, but are becoming more valuable every year. Flocks of merino sheep, kept for their wool, are wintered in the warm meadows of *Andalusia*, and driven every summer to the high pastures of the northern provinces.

**154.** The government is a limited monarchy with a parliament called the *Cortes*. The great colonies once held in South America have all rebelled and become independent republics ; **Cuba** and **Porto Rico** in the West, and the **Philippines** in the East Indies alone remain, besides the **Canary Islands** off Marocco, in which the magnificent Peak of Teneriffe soars from sea-level for 12,000 feet, far above the clouds. Spain is now divided into forty-nine small provinces, although the names of the old provinces which were once kingdoms are better known abroad, and are used here. The railway system is very imperfect on account of the rough country ; mules and pack-horses carrying on much of the transport trade of the interior.

**155. Towns of Northern Spain.**—The capital **Madrid** (390), in the very centre of the country, standing on the desolate high plain of *Old Castile*, 2000 feet above the sea, is an ugly brick-walled town, but its picture galleries are famous for their works of art. A short distance to the north the **Sierra Guadarrama**, part of the Castilian Range, towers over the *Escorial*, a wonderful palace built by an early king ; and 40 miles to the south the ancient capital **TOLEDO**, on the Tagus, still famous for the swords manufactured in its workshops, is full of beautiful old buildings erected by the Goths and Moors. The dreary plains of *La Mancha*, to the south-east, live in literature through Cervantes's immortal story of "Don Quixote." *Old Castile*, north of the Castilian Range, occupies a still higher plateau ; its chief town, **VALLADOLID**, contains the house where Columbus died. **SALAMANCA** in *Leon* lies a little farther south ; it was the centre of learning in Europe during Moorish supremacy.

**BILBAO**, in the *Basque Province* on the Bay of Biscay, is becoming increasingly important on account of the rich iron-ore shipped there. **SANTANDAR**, the busiest harbour on the north of Spain, and **OVIEDO**, an inland cathedral city where a vast array of sacred relics is preserved, are the chief towns of *Asturias*, a province whose richly wooded mountains were never conquered by the Moors. The quiet fishing and trading Bay of **CORUNNA**, in the north-west corner of Spain, was the gathering place for the "Invincible Armada" sent out against England in 1588.

The inland province of *Aragon*, traversed by the broad valley of the Ebro, has ZARAGOSSA (this name is the time-worn form of *Cæsar Augustus*) as its capital. BARCELONA (250), in the Mediterranean province of *Catalonia*, is the chief seaport of Spain and the most advanced modern town in the peninsula, as energetic in its cotton factories as in its foreign commerce.

**156. Towns of Southern Spain.**—VALENCIA (150), in the midst of rich *huertas* (the *Moorish Paradise*), has an ancient silk exchange, and is a centre of the silk-producing and manufacturing trade. The **Balearic Isles** extend parallel to the coast at a distance of about 50 miles, a mountainous chain of fruit and wine growing lands, with sunny PALMA on *Majorca* as their chief town. MURCIA, the half deserted capital of a former province, stands on the railway from Madrid to CARTAGENA, a strongly fortified harbour founded by the Carthaginians before the Romans possessed the land. MALAGA (120), an active seaport and modern city, is the port of GRANADA, the last capital of the Moors in Spain, and still boasting of the **Alhambra**, one of the grandest buildings in the world, full of unequalled Arab decoration. The British ensign floats over the impregnable fortress of the Rock of Gibraltar at the strait between the Atlantic and Mediterranean, while the Spaniards occupy the rock of Ceuta, in Africa, directly opposite. Cape Tarifa, the most southern point in Europe, and Cape Trafalgar, off which Nelson was killed in his last victorious sea-fight, come between Gibraltar and CADIZ, the principal naval harbour. Close by stands JERES, which gave its name to sherry wine. The Guadalquivir opens a little farther north, and is navigable by small vessels for 60 miles to SEVILLE (130), the great trade town of *Andalusia*, whence oranges, cigars, and wines are exported. Farther up the river the Moorish capital of CORDOVA, once held nearly a million people, but is now reduced to a small town, depending on the manufacture of leather. The little port of HUELVA, on the Rio Tinto, is prosperous and bustling, shipping copper-ores and the metal itself, in preparing which poisonous sulphury smoke has destroyed the vegetation for miles around.

## CHAPTER VIII

### CENTRAL EUROPE

#### SWITZERLAND.

**157. SWITZERLAND** is the highest country in Europe, its average level being 4000 feet above the sea, while its lofty snow-fields mount up into stately peaks, nearly 3 miles high. It occupies three natural regions: (1) The **Alps**, on which the southern portion of the country lies; these are separated into four groups by river valleys, all beginning close to the central but not very lofty mass of the **Great St. Gothard**; (2) a broad high plain, with many lakes and rivers that descend impetuously from the mountains; (3) the comparatively low, caverned ridges of the **Jura**, forming the north-western frontier against France.

**158. Mountains, Rivers, and Lakes.**—The **Rhine** is the boundary with Germany and Austria to the north and west, and the **Alps** themselves with Italy. The **Rhone**, rushing westward in a muddy stream down its long valley, receives torrents from the steep slopes and lofty peaks of the **Bernese Oberland** on the north, and from the more gently sloping valleys of the **Alps of Valais** on the south. In the former group are the snow-clad **Jung-frau** (*maiden*), the **Finsteraarhorn**, and the **Aletschhorn**, from which the largest glacier in Europe creeps southward to the Rhone. The crest of the **Alps of Valais**, which culminate in the **Matterhorn** and **Monte Rosa** (named from its rosy glow at sunrise and sunset), form the frontier to Italy. The **Rhone** flows into the upper end of the **Lake of Geneva**, at the south-western corner of Switzerland, as a rapid muddy

stream, but escapes from the lower end in a bright blue clear current, having left its mud in the quiet water of the lake. It rushes through a gorge into France and turns southward into the Mediterranean Sea. The Rhine, also springing from Alpine glaciers and snow-fields, flows eastward and northward through a similar valley between the less lofty **Rhaetian Alps** on the south (beyond which lies the valley of the **Engadine**, with the river Inn flowing to the Danube) and the confused masses of the **Alps of Glarus** to the north. At the north-east corner of Switzerland this great river is, like the Rhone, filtered by traversing a large sheet of water, the **Lake of Constance** (*Boden See* in German). Issuing from that lake the clear current throws itself over the Fall of Shaffhausen (60 feet high), and, after flowing between the Jura and the Black Forest, turns northward (§ 165). This river and the Lake of Constance separate Switzerland from Austria on the east and from Germany on the north. The valley of the **Ticino**, cut southward from the St. Gothard to **Lago Maggiore** (*i.e. Greater Lake*), separates the main chain of the Alps into the Rhaetian on the east and those of Valais on the west. The valley of the **Aar** runs north between some of the most majestic peaks of the Swiss Alps, separating those of Glarus on the east from the Bernese Oberland on the west. The Aar is the chief river of the high plain: first it strings together the **Lakes of Brienz and Thun**, between which **INTERLAKEN** (*i.e. Between Lakes*) has become a famous tourist centre, then rushes north-westward towards the Jura encircling Bern, the picturesque capital of the Republic. The Aar has been turned into the little lake of **Bienne** to regulate its impetuous floods, and issuing thence is strengthened by the drainage of the large **Lake of Neuchâtel** (*Neuenberg See* in German, both names meaning New Castle), and follows the base of the Jura to the Rhine. Tributaries reach it before its junction from the **Lake of Lucerne** (often called the *Lake of the four forest cantons*), the **Lake of Zurich**, and many smaller sheets of water which beautify the valleys of the Alps of Glarus.

159. **Resources and Climate.**—Switzerland has no mineral wealth, and the numerous manufactories of the north-eastern

cantons are driven by water-power from the strong mountain torrents in default of coal. The climate varies with the altitude and exposure. Winter reigns all the year above 9000 feet, where the snow never melts; while summer is almost perpetual in the smiling valley of the Ticino, where maize and olives grow. On the pastures of the high plain many cattle and sheep are reared, the flocks being led up the mountains in summer, and kept down in the valleys during winter. Cheese and condensed milk are exported. The chief resource of the country, however, is its magnificent scenery, to see which thousands of strangers arrive every year.

160. The railway system has been constructed at enormous expense, in order to give easy transit through the mountainous country, and small steamers ply on all the larger lakes. The Rigi, for instance, rising from the Lake of Lucerne to the height of a mile above sea-level, is climbed by two steep railways, and its hotel-crowned summit is alive all summer with visitors, although silent and snow-scaled the rest of the year. The most important through railway is that from Basel, which passes by the many armed Lake of Lucerne, winds along rock-hewn galleries and tunnels up the wild valley of the Reuss, pierces the Great St. Gothard in a tunnel more than 9 miles long, and descends the valley of the Ticino to Milan. The great roads across the Alpine passes to Italy and Austria are no longer so important as they were before the railways were made.

161. People.—The Swiss, or *Helvetians*, are mainly a Teutonic people, but although the country is so small there are three chief languages—German spoken by two-thirds of the people, French in the west, and Italian in the south, while a fourth and quite peculiar language, Rumanch, is spoken by a few thousands in the south-east.

Courage and love of liberty have always been characteristic of the Swiss; since 1308, when the three forest cantons—Uri, Schwyz (whence came the name of the whole country), and Unterwalden—were stirred up by William Tell to defeat the Austrians, they have been free from foreign control. After the redistribution of Europe in 1815 the neutrality of Switzerland,

now increased to include twenty-two cantons or small independent republics, was guaranteed. Yet military training is still part of the regular school education of boys. Each canton governs itself by its own laws, but a general parliament for national and foreign affairs meets at Bern. All religions are tolerated, and more than half of the people are Protestants.

**162. Towns of Switzerland.**—The largest town, including its suburbs, is **ZÜRICH** (90), in the north-east, where there is a famous university and a great technical college. **WINTERTHUR**, **ST. GALL**, and **CONSTANCE**, farther east, are all engaged in manufactures. **BASEL** (*Bale*), on the Rhine, with the university where Erasmus taught, is the great railway junction with Germany. **GENEVA** (*Genf*), where Calvin perfected and applied his presbyterian form of worship, stands at the south-western end of its lake in a little horn of Switzerland, which projects into France. **LAUSANNE**, on the north shore of the lake, is beautifully situated, and like Geneva and **NEUCHÂTEL**, on the lake of the same name, it has large manufactures of watches and jewellery. The Swiss are dwellers in hamlets by choice, and their picturesque wide-caved wooden *chalets* or cottages, the roofs weighted with blocks of stone to resist the wind, are perched all over the country. Sudden floods, land-slips, and avalanches (or snow-slips) from the high summits often destroy whole villages, but the brave mountaineers cling to their favourite sites, and build their cottages anew when the danger is past.

#### LEICHTENSTEIN.

**163.** The little principality of **Leichtenstein**, on the right bank of the Rhine, before that stream enters Lake Constance, is independent, but under the protection and control of Austria.

#### GERMAN EMPIRE.

**164. Boundaries.**—The empire of **GERMANY** is separated from Switzerland and Austria-Hungary on the south, about lat. 48° N., by the Rhine and the first steep ridge of the Alps. The crest of the **Vosges Mountains** marks the French

frontier, and the western boundary, curving westward, passes the little duchy of Luxemburg, Belgium, and Holland, and ends on the North Sea in 7° E. The eastern boundary from Austria is sharply defined by the Bohemian Forest range, making the southern and mountainous part of Germany 250 miles wide. At 50° N. the eastern frontier follows the Ore Mountains, then the Giant Mountains, and the Sudetic Range eastward, as far as 19° E.; thence an irregular line traced north-eastward to 21° E., on the Baltic over swampy lake-studded flats, separates Germany from Russia. Germany is thus more than 600 miles wide in the north; its extreme length from north to south (Denmark to Switzerland) is 560 miles, the whole country being  $1\frac{3}{4}$  times the size of the United Kingdom. The flat Baltic coast is bordered by sand-bars, shutting off shallow lagoons called *haffs* (or havens) at the mouths of the chief rivers. The little strip of North Sea coast is also shallow and dangerous for shipping, although there are many lighthouses and light-ships to guide vessels. The Eider Canal, cut across the German part of Jutland, allows ships to pass between the North Sea and the Baltic without rounding the Skaw.

165. The Rhine, which long formed the western frontier, is perhaps more celebrated in history and romance than any other river, and is also a great commercial highway. Canals link it to the Rhone and Seine on the west, to the other German rivers on the north-east, and to the Danube on the south-east. The Rhine flows westward from Lake Constance into Germany, turns northward at Basel, and as the *Upper Rhine* flows through an alluvial low plain, about 20 miles wide, walled in by the Vosges on the left hand, and the dark pine-clad steepes of the Black Forest parallel to it on the right. Two tributaries flow in on the right through valleys renowned for their loveliness—the Neckar at Mannheim, and the Main at Mainz. Here the plain ceases, and the *Middle Rhine* enters on its most picturesque scenery, plunging through a narrow gorge across the wide ridge of old rocks, which joins the high lands of France and northern Germany. In the middle at Coblenz (*i.e.* confluence), the Moselle on the left, and the Lahn on the right come down



similar gorges, and divide the ridge into four low mountain masses—the **Taunus** and the **Westerwald** on the east, the **Hunsrück** and the **Eifel** (a region broken by innumerable little extinct volcanoes) on the west. The gorge ceases at Cologne, and the scenery of the *Lower Rhine* becomes tamer as the river sweeps out over the great low plain of Holland. An outcrop of coal-bearing rocks marks the change to the newer strata of the plain, especially in the valley of the little river **Ruhr** on the right.

**166. Other Rivers.**—The **Weser**, from the **Thuringian Forest**, winds over the great plain, widening into a shallow estuary, and enters the North Sea close to the wider and deeper mouth of the Elbe, just opposite the Humber in England. The **Elbe** enters Germany through the *Saxon Switzerland*, a succession of sandstone gorges, walled in as if with giant masonry carved into fantastic crests and columns, where the granite ranges of the **Ore Mountains** and the **Giant Mountains** meet; but most of its course is over the heathy or marshy northern plain. The rapid **Oder** runs parallel to the **Sudetic Mountains**, through the coal-bearing rocks of the province of *Saxony*, and turns northward across the plain to the **Oder Haff** on the Baltic. Farther east the **Vistula** (*Weichsel*), with only a short course on German ground, sends one branch into **Danzig Bay**, and another into the long narrow **Frisches Haff**; while the river called **Niemen** in Russia and **Memel** in Germany, enters the **Kurisches Haff** in the extreme north-east. These five rivers, whose courses on the plain are almost parallel, are liable to floods, which often spread desolation over the country.

The **Danube**, second only to the Rhine in European history, flows from the **Black Forest** eastward across the flat South German high plain of glacier-borne clay, just south of the **Jura** chain, and enters **Austria-Hungary** at the southern end of the **Bohemian Forest**. It is interesting to notice that in Germany the word *forest* is often used for *mountain*, most of the woods, in fact, grow on the mountain slopes.

**167. Minerals.**—The **Ore Mountains** have yielded copper, zinc, silver, lead, and gold for hundreds of years, and the

Harz Mountains are equally metalliferous, although perhaps better known for the wild scenery of their rocky summit, the Brocken. Coal and iron occur in such abundance that Germany comes next to the United Kingdom and United States in producing them. Salt is very abundant, and for chemicals of all kinds the German works are absolutely without rivals.

**168. Climate and Crops.**—The climate is mild in the north-west of Germany where the influence of the ocean is felt, but towards the east and south is more continental on account of the height of the land, and its distance from the sea. The warmest part of Germany at all seasons is the sheltered narrow plain of the Upper Rhine, where the rich soil consequently produces tobacco and fruit and the grapes which yield the "good Rhine wine" in exuberant abundance. The vine indeed grows farther north in Germany than in any other part of the world, ripening even in 52° N., but the national drink of Germany is beer. One-third of southern Germany is still covered with woods; in the north the proportion is less, but as wood is the chief domestic fuel (burnt as a rule in closed stoves), tree-felling and planting are everywhere regulated by government so as to keep up a constant supply. Rye, grown in the northern plains, furnishes a coarse brown meal on which many of the poorer classes live, but potatoes are nearly as much the staff of life as they are in Ireland. Oats and wheat are largely cultivated, but, as in Britain, a great deal of wheat has to be imported. Cattle and horse-breeding are characteristic of the Baltic lands, and the rearing of swine is a great industry in the lower Rhine country. The northern farmers raise large crops of sugar-beet, from which the manufactories of the Empire make more than a quarter of the sugar produced in the world.

**169. History.**—Several tribes of Teutons or Germans, an Aryan race calling themselves *Deutschers*, from a word meaning "the people," spread at an early time over central Europe, north of the Alps between the Rhine and the Carpathians. Their power once stretched southward as far as Rome, and the Teutonic realm was called the Holy Roman Empire. This empire, consisting of a great and ever-changing number of small semi-inde-

pendent states, gradually lost its southern and north-western territory, but gained ground to the north and east, extending along the Baltic shores, where the Teutons drove back or incorporated the older peoples and the **Slavs**, who had already settled there. In 1806 Napoleon broke up this empire, and ruled all the land except *Prussia*, then a small kingdom in the north, and *Austria* in the east. In 1815 the liberated states formed the **German Confederation**, with *Austria* at their head. In 1864 *Schleswig Holstein*, the southern province of Denmark, was forced to join; but the King of *Prussia* annexed it to his own kingdom, and in a short but fierce war defeated the Austrians. *Prussia* formed the **North German Confederation** in 1866, absorbing many of the small states; and when France declared war in 1870, the independent southern states, except *Austria* (then itself an empire), came to the aid of their northern kindred. The present **German Empire** resulted, the King of *Prussia* becoming hereditary emperor; but each state retained its own monarch and parliament, the province of *Alsace-Lorraine*, newly taken from France, being alone placed under direct Imperial rule.

**170. States.**—The **German Empire** consists of twenty-six states, four of which are kingdoms, six are grand-duchies, five duchies, seven have the humbler title of principalities, and three are free towns which, for a thousand years, have preserved a democratic form of government. The following table, which is intended for reference only, gives some of the more important statistics of these states :—

## STATES OF THE GERMAN EMPIRE.

Name.	Area. sq. m.	Population (1885).	Den. per sq. m.	Government.	Capital.
1. Prussia	137,000	28,000,000	204	Kingdom	Berlin
2. Bavaria	29,000	5,400,000	186	"	Munich
3. Württemberg	7,500	2,000,000	266	"	Stuttgart
4. Saxony	5,800	3,200,000	551	"	Dresden
5. Baden	5,800	1,600,000	276	Grand Duchy	Karlsruhe
6. Mecklenburg-Schwerin	4,800	570,000	120	"	Schwerin
7. Hesse	2,900	960,000	331	"	Darmstadt
8. Oldenburg	2,400	340,000	142	"	Oldenburg
9. Brunswick	1,500	370,000	246	Duchy	Brunswick
10. Saxe-Weimar	1,400	310,000	221	Grand Duchy	Weimar
11. Mecklenburg-Strelitz	1,100	98,000	89	"	New Strelitz
12. Saxe-Meiningen	930	215,000	231	Duchy	Meiningen
13. Anhalt	870	248,000	290	"	Dessau
14. Saxe-Coburg and Gotha	820	199,000	243	"	Coburg
15. Saxe-Altenburg	510	161,000	316	"	Altenburg
16. Waldeck	470	56,000	120	Principality	Arolsen
17. Lippe	440	123,000	280	"	Detmold
18. Schwarz-Rudolstadt	360	84,000	233	"	Rudolstadt
19. Schwarz-Sondershausen	330	74,000	224	"	Sondershausen
20. Reuss-Schleiz	320	110,000	314	"	Gera
21. Schaumburg-Lippe	210	37,000	180	"	Bückeburg
22. Reuss-Greiz	120	56,000	466	"	Greiz
23. Hamburg	160	519,000	..	Free Town	....
24. Lubeck	120	68,000	..	"	....
25. Bremen	100	166,000	..	"	....
26. Alsace-Lorraine	5,600	1,560,000	279	Crownland	Strasbourg

**171. Government.**—The people of the Empire elect an Imperial Parliament or *Reichstag* of about four hundred members, and the semi-independent government of each state sends representatives to the smaller *Bundesrath*, or Imperial Upper House. These bodies manage the foreign affairs of Germany under the Emperor and the Imperial Chancellor; they have full control over the war navy, the army in time of war, the export and import trade, the railways, and the post-office. Germany forms commercially the *Zollverein* or Customs Union; but this union, within which the protective system of trade is enforced, is not yet quite the same as the Empire, for it includes the duchy of Luxemburg (§ 127), and until 1888 it did not include the free towns of Hamburg and Bremen. Every German above twenty years of age must serve for three years in the army as a common

soldier, so that the whole male population receives a military training in addition to the very thorough school teaching which is compulsory. The Empire is under thorough military control, and police supervision is so complete that every movement of strangers is recorded.

**172. People.**—The great unifying principle is the language, of which there are two dialects—Low German allied to Dutch in the north, and High German, which is that used in books, in the south. The religious reformation of the sixteenth century originated in Central Germany, and in all the northern states **Lutheran** worship is legally established, while in the south the **Roman Catholic** faith still prevails. The people of Germany as a whole are patient and plodding, succeeding both in trade and in war by their willing submission to discipline. A deep current of romance and emotion flows through these prosaic qualities, and the love of the beautiful in art, music, and poetry is widespread amongst all classes. Patriotism rises to a passion, and there is consequently much jealousy of other nations. There are twenty universities, and these, like the technical colleges, are more crowded, the fees are lower, and the learning of the professors, as a whole, greater than in any other country.

**173. Western Towns of Prussia.**—**PRUSSIA**, the sovereign State, occupies the whole north of Germany; the three free towns of Hamburg, Bremen, and Lübeck forming political islands within it. In the province of *Rhineland* the ancient city of **AIX-LA-CHAPELLE** (*Aachen*, 90), where Charlemagne held his court as Roman Emperor, is now one of the chief stations on the through railway from Belgium to Berlin. **COLOGNE** (*Köln*, 160), once a Roman colony (whence its name), has always been great from its position as a meeting-place of roads, and is now the headquarters of the Rhine steamer trade and chief junction of the western railways. The glorious **Gothic Cathedral**, commenced in the thirteenth century, but not finished until 1880, has pinnacles 520 feet from the ground, the highest stone building in the world. **DÜSSELDORF** (110), to the north, where the poet Heine was born, is the Rhine port for the manufacturing district around the twin towns **ELBERFELD** and **BARMEN**

(together 210), a centre of dense population. At **ESSEN**, in the mining district of the Ruhr, Krupp's vast steel works employ more than 10,000 men. Coalpits and iron furnaces stretch eastward into the province of *Westphalia*. *Hesse-Nassau* contains the great financial town of **FRANKFURT-on-the-Main** (150), the home of the Rothschilds. **WIESBADEN**, under the shelter of the Taunus ridge, is one of the most famous of the mineral water baths (in German *Bad*) which give names to many towns in this district. The moorland province of *Hanover*, the old kingdom of the Guelphs, is bounded by the Elbe and the North Sea, and traversed by the Weser, on a tributary of which stands the capital **HANOVER** (140) and the renowned university city of **GÖTTINGEN**. The free town of **BREMEN** (120), 50 miles from the mouth of the Weser, is a great port, but far inferior to the other free town **HAMBURG** (with the adjacent port of **ALTONA** in *Schleswig Holstein*, 470). Famous of old as a Hanse town, Hamburg is now the chief continental port; huge ocean steamers, trading with all quarters of the world, are piloted up and down the intricate channels of the Elbe, which is made navigable by every tide for 60 miles from sea to quay. **WILHELMSHAVEN**, built at immense cost on the shallow North Sea coast, and **KIEL**, on the Little Belt, the best harbour on the Baltic, are the chief naval stations of the Empire for warships.

**174. Central Towns of Prussia.**—**LÜBECK**, an old-fashioned free town on the Trave, was once the glory of the Hanseatic League. **STETTIN** (100), on the Oder in *Pomerania*, is now the most active Baltic port, but much of its shipping stops at the sea-haven of **SWINEMUNDE**, at the entrance of the shallow Oder Haff. **Amber**, a fossil gum, is found in this region, being dug from the sand or washed up by the waves. *Brandenburg* province is the heart of Prussia, and its capital, **Berlin**, is the capital of that kingdom and of the German empire.

**Berlin** (1300), in the centre of a lake-dotted sandy plain, stands only 100 feet above the sea, and its little river, the Spree, has been joined to the Elbe and the Oder by canals, while railways from all sides converge upon it. The magnificent street, *Unter-den-linden*, divided by a double avenue of lime trees, is the

chief glory of the town. The *Thiergarten* (zoological garden) separates the suburb CHARLOTTENBURG, where the Emperor Frederick III died in 1888. Although the palaces, museums, university buildings, and statues are great and stately, the houses of the people are poor and greatly overcrowded. The manufactures of Berlin are bewildering in their variety; vast engineering and printing works and factories for cotton and millinery are of special importance. POTSDAM, on an island in a small lake 10 miles to the south-west, contains the summer palace of the Emperor, surrounded by beautiful parks.

**175. Eastern Towns of Prussia.**—The Oder brings down the mineral wealth of the province *Silesia*, (*Schlesien*) from the ores of the Giant Mountains and the Sudetic Range, and the coal-fields at their base. The population of this province is very dense, although spread in small industrial towns, often mere groups of factories and workmen's huts surrounding a rock crowned by the proprietor's castle. BRESLAU (300), on the Oder, is the one large city; it was once a fortified frontier town, which belonged in turn to four different nations, but its walls now only form a fashionable promenade. POSEN is a strong fortress kept up in the half Slavonic province of *Posen*, on the Russian frontier, and was once part of the kingdom of Poland. DANZIG (110), a fortress on Danzig Bay, exports the grain and timber of the lands watered, and too frequently flooded, by the Vistula, in the province *West Prussia* and Poland. KÖNIGSBERG (150), in *East Prussia*, on the Frisches Haff, is gradually losing its sea trade to the out-port of PILLAU; but its university is for ever celebrated as that of the great philosopher Immanuel Kant.

**176. Southern Towns of Prussia.**—In the south-west of Prussia the province of *Saxony*, which is mixed up with the little states of the Thuringian Mountains, is memorable as the scene of Luther's labours, and for the sites of many fiercely fought battles. MAGDEBURG (110), the chief city, HALLE, named after its great deposits of salt (*hals*), and a host of smaller towns on the plain and around the Harz Mountains depend on salt, metals, sugar-growing, and chemical works. Five famous

little towns lie in a line of 50 miles along the 51st parallel: EISENACH, in the west, under the shadow of the Wartburg, where Luther translated the Bible into German; GÖTTA, the seat of the largest and most perfect map-making establishment in the world; ERFURT, a Prussian manufacturing town; WEIMAR, made great by the fame of the poets Goethe and Schiller, who lived there; and JENA, with a famous old university, where Napoleon crushed the Prussian power in 1806.

**177. Towns of the Kingdom of Saxony.**—The kingdom of SAXONY, the most densely peopled State in Europe, lies between the Prussian province of the same name and the barren northern slopes of the Ore Mountains. The whole country is one vast workshop of skilful miners and industrious factory hands engaged in every branch of manufacture. The capital, DRESDEN (250), on the Elbe, is a treasury of art, both in the architecture of its buildings and in the contents of its museums and picture galleries. As the *German Florence*, it presents a marvellous contrast to the smoke-stained towns of toil which surround it. "Dresden china" is made at MEISSEN in the neighbourhood. CHEMNITZ (110), to the south-west, has been termed the *Saxon Manchester* on account of its iron and cotton goods. LEIPZIG (170), in the north, still does the largest printing and publishing business in the world. It is a great railway centre, and three annual fairs are held, attended by merchants from all lands, who buy books, furs, and leather goods. Near this town in 1813 the hitherto invincible Napoleon was defeated by the allied armies in a battle three days long, in which half a million men were engaged.

**178. Towns of Bavaria.**—BAVARIA occupies the moraine-strewn high plain of the upper Danube, between the Alps and the low broken mountains north of the Jura. The blown soil or loess, as much as 300 feet thick, produces great harvests of hops used in the breweries of the capital. Some of the Alpine valleys and lakes, especially the Königssee, in the south-east, are of extreme beauty, and much visited by tourists. The capital, MUNICH (*München*, 260), although 1700 feet above sea-level, is built on a dull and swampy site, but resembles



Dresden in the number and variety of the art treasures preserved in its picture galleries. The more ancient city of AUGSBERG once had far-reaching influence, though now insignificant. RATISBON (*Regensburg*) on the Danube, like ULM in Württemberg, 100 miles higher up the river, is a port for barge traffic to Vienna. NÜRNBERG (*Nuremberg*, 110), farther to the north, keeps its mediæval look, and its staple trade is the manufacture of toys, chiefly made of wood from the near forests of the Franconian Jura.

**179. Towns of South-Western Germany.**—WÜRTTEMBERG, a kingdom to the west, has STÜTTGART (120), "the Swabian Paradise," as its capital, a city of note in the musical world, and the chief publishing centre of southern Germany. Farther south the lovely little university town of TUBINGEN nestles on the vine-clothed banks of the Neckar.

The Grand-duchy of BADEN, occupying the Black Forest Mountains and the eastern half of the upper Rhine plain, possesses the commercial town of MANNHEIM in the north, but is chiefly known through HEIDELBERG on the Neckar, the most beautiful town of Germany, with an ancient university, and through the mineral springs and baths of BADEN-BADEN which give the name. KARLSRUHE (*i.e. Charles's Rest*), built by the caprice of a former Duke Charles, resembles the web of a garden spider in its plan, thirty-two straight roads, which radiate from the palace as a centre, being connected by concentric circular streets.

The Grand-duchy of HESSE covers the northern end of the upper Rhine valley as far as the Main. The capital, DARMSTADT, is on the eastern side of the plain, but the chief town, MAINZ (*Mayence*), a strong fortress on the left bank of the Rhine, is remembered as the place where printing was invented by Gutenberg.

**ALSACE-LORRAINE** (in German *Elsass-Lothringen*), the *reichsland* or crown-land of the Empire, occupies the western margin of the Rhine. The centre of German cotton-spinning is at MUHLHAUSEN (*i.e. Town of Mills*), in the south, a town which had long been Swiss before becoming French. STRASBURG

(110), on the Rhine, surrounded by a chain of strong forts to resist French invasion, possesses an ancient **Minster** built of red sandstone, and adorned with a wonderful astronomical clock. One of the typical industries is the fattening of geese by forced feeding, in order to obtain large livers for *paté-de-foie-gras*. **METZ**, close to the French frontier, is another very strong fortress.

### AUSTRIA-HUNGARY.

**180. Boundaries.**—The monarchy of **AUSTRIA-HUNGARY**, the largest country in Europe except Russia, has twice the area of the United Kingdom. Variety is its great characteristic in configuration, climate, races, languages, and government. The country has exactly the same position in latitude as France, and in longitude ranges from 10° to 26° E. Stretching along the eastern **Alps**, it separates Bavaria from Italy, and touches the **Lake of Constance** on the northern slope, and the **Lake of Garda** on the south. It curves round the east coast of the **Adriatic** in a narrowing strip on the limestone heights, fringed by ragged islands and inlets, and touches **Servia** and **Montenegro**. Eastward it extends over the great plain north of the Danube to the **Carpathians**, touching **Rumania**, and sweeps beyond this natural boundary against Russia to an artificial political frontier. The north-western portion is on the broken high plain of **Bohemia**, which projects into German territory like a little stranded Spain, buttressed by the **Bohemian Forest**, the **Ore Mountains**, and the **Giant Mountains**.

**181. Rivers.**—The **Danube** (*Donau*), navigable beyond the monarchy to east and west, binds the whole together by its water highway. The **Inn** flows in on the right on the western frontier, and the strong river glides through the grand gorges of *Upper Austria*, spreads in many branching channels over *Lower Austria* to the middle of the plain of Hungary, where, at 19° E., it suddenly swerves southward through continuous marshes. The long **Drave** from the *Tyrol* enters on the right and turns the main stream north-eastward to the 60 mile-long gorge of the **Iron Gate**, where it leaves the country. The **Theiss**, aswarm with

fish, and swollen by many eastern tributaries, joins from the north, after traversing the dreary marshes in endless loops, parallel to the south-flowing portion of the Danube. The **Save** flows parallel to the Drave farther south along the Servian frontier, and enters the Danube on the right bank. This vast water system is liable to disastrous floods, because the Iron Gate gorge is too narrow to allow the rainfall of the plain brought down by the river to escape freely; and the rapids are such that only the most powerful steamers can force a way through; but the government has commenced to widen the gorge.

**182. Climate and Crops.**—The climate on the north-eastern slope of the Carpathians is severely continental; the mountainous regions of the west are Alpine, but the greater part of the land is warm in summer, with winters of moderate severity, and a plentiful but not excessive rainfall. In the valley of the Adige and along the Adriatic there is a Mediterranean or semi-tropical climate, always warm, with intense clear skies and brilliant sunshine. Great areas of the high mountain land are covered with forests of sombre pines, and woods of oak and beech diversify the lower slopes. Grain of every kind grows well; wheat is most important as a crop for export, and in the south there are rich fields of **maize** and even rice. **Rye** and **potatoes** are the main food of the poor. **Vineyards**, yielding famous wines, receive great attention, and tobacco is largely grown in Hungary. **Agriculture** is the staple industry, although the mines of precious metals, of **coal**, **iron**, and **salt**, have always been a source of revenue. **Manufactures** are on the increase, and the **railway system** is in communication with all the states of Europe, the Alps, Carpathians, and Balkans being crossed by lines. There are more **horses** in the monarchy than in any other State except Russia.

**183. History.**—In the end of the eighth century a small *mark* or march land on the Danube was made one of the outposts of Charlemagne's empire; it was subsequently named *Austria* (in German *Oesterreichs* or Eastern Dominion), and a few hundred years later ranked as a duchy. The Dukes of Austria became very powerful, and in the sixteenth century succeeded to the

kingdoms of Hungary and Bohemia by marriage. Invasion by the Turks was a terror for centuries, and not until the end of the seventeenth century were the Mohammedans driven south of the Danube. The Dukes of Austria had meanwhile become monarchs of Italy, Spain, and the Netherlands, and Emperors of Germany. A large part of the unfortunate kingdom of Poland was next seized on, but finally unsuccessful wars reduced the Austrian possessions, and early in this century the country became a military empire ruled by an autocratic *Kaiser* or emperor. For generations this State, with its changing boundaries on the map, resembled a flapping table-cloth spread out to dry in the wind, now covering a greater, now a less extent of territory. In 1867 the Empire was rearranged and named the Monarchy of Austria-Hungary; all the western provinces and *Galicia* forming the **Empire** of Austria or the "*cis-Leithan crown-lands*," and the remainder the **Kingdom** of Hungary or the "*trans-Leithan crown-lands*," the two being separated by the little river *Leithe*.

**184. People.**—Nearly half the people are **Slavs**, typically slow and slovenly; but as there are several scattered tribes of this race speaking different languages, they have not the chief share in government or commerce. The largest and most educated section, speaking the *Czech* language, inhabits *Bavaria*; *Poles* live in the north-east, but most of the other Slavs who are less cultivated occupy the southern provinces. One-quarter of the population are earnest, energetic, educated **Teutons** speaking German, and these, forming a compact group in *Austria-proper*, have taken the lead all round, and **German** is the official language. A few lazy and poetical people of the **Romanio** race, speaking languages derived from *Latin*, live in the south; chiefly *Italians* in the west, and *Rumanians* in the east. All these are of Aryan descent, but one-sixth of the people are **Magyars** or Hungarians, a proud and independent race, fond of fine dresses and of dancing, descended from the first occupants of Europe, who were of the Yellow type like the Finns. The hated and despised **Semitic Jews** swarm in the east; and the mysterious **gipsies**, whose origin is unknown, form great colonies as in

Spain, or wander over the country. Most of the Slavs and Teutons are Roman Catholics in **religion**, but in the east several millions belong to the Greek Church, and in Hungary there are many Protestants. **Education**, although now made compulsory, is as yet general only amongst the Teutons and Jews; the Magyars, and still more, the Slavs, although improving since government has allowed them to be taught in their own languages, are far behind. The **army** numbers over a million in time of war, taxes are consequently heavy, and trade is greatly hampered. Each province has its **local parliament**, and possesses a limited degree of freedom, sending delegates also to the diet of the Crown-land, in which it is included, and to the **Imperial Diet** as well, which, under the Emperor-king, conducts all foreign affairs, controls the army and navy, and directs most of the railways.

#### THE PROVINCES OF AUSTRIA-HUNGARY.

##### *Austrian Crown-Lands.*

Name.	Area. Square miles.	Population. 1887.	Capital.
Lower Austria .	7,600	2,600,000	Vienna
Upper Austria .	4,600	780,000	Linz
Salzburg .	2,700	170,000	Salzburg
Styria .	8,600	1,300,000	Graz
Carinthia .	4,000	360,000	Klagenfurt
Carniola .	3,800	500,000	Laibach
Coast Lands .	3,100	690,000	Trieste
Tyrol .	11,000	920,000	Innsbruck
Bohemia .	20,000	5,800,000	Prague
Moravia .	8,600	2,200,000	Brunn
Silesia .	2,000	590,000	Troppau
Galicia .	30,000	6,400,000	Lemberg
Bukowina .	4,000	630,000	Czernowitz
Dalmatia .	4,900	520,000	Zara

##### *Hungarian Crown-Lands.*

Hungary .	108,000	14,700,000	Buda-Pesth
Croatia and Slavonia .	16,000	2,000,000	Agram

185. The **Alpine Provinces** of the *Tyrol*, *Salzburg*, *Carinthia* (*Kärnten*), and *Styria* (*Steiermark*) are magnificently picturesque, the heights of dolomite or magnesian limestone rise more precipitously than any others in Europe. A **railway** from France *via*

Switzerland and the Arlberg Tunnel runs along the fertile valley of the Inn to Vienna, while another traverses the **Puster-Thal** south of the great range of the **High Tauern**. **INNSBRUCK** (*Inn Bridge*) is a railway junction where trains from Germany run over the strongly fortified **Brenner Pass**, and descend the sunny valley of the Adige (*Etsch*) to Italy past **TRENT**, a graceful town in the midst of olive-groves and mulberry woods. Agriculture, cattle-rearing, and salt-mining are the principal industries of the Tyrol; but the light-hearted peasants are born musicians, and excel as players of the *zither*. Near **SALZBURG** (*Salt town*), one of the most picturesque towns in Europe, there are many **mineral springs**, those of **GASTEIN** being the most frequented by invalids. **GRAZ** (100), a great iron-working university town, in the centre of a mining region where remarkably fine **steel** is made, stands on the main railway between Vienna and Trieste.

**186. Adriatic Provinces.**—The *Coast Lands* stretching inland from the Adriatic over the limestone ranges of the **Dinaric Alps**, are full of mysterious caverns, underground river-channels dissolved out by the flowing water, and little fertile "*sinks*" or hollows where caves have fallen in. The marvellous **Lake of Zirknitz** in *Carniola* sometimes covers 30 square miles, and swarms with fish; at other times it entirely drains away through subterranean cracks, and crops are often grown and harvested on its fertile bed before the waters well up once more. At several points along the shore the underground rivers rise from the sea-bed as fountains of fresh water. The bare bleak hills, rising above the fretted island-chain along the coast, no longer justify the name of *lofty Dalmatia*, given long ago when thick forests descended to the sea. At **IDRIA** quicksilver is mined. **TRIESTE** (140) is the chief harbour of the monarchy; it is a free port—that is to say, the duty is not paid when the goods are landed, but when they leave the town by rail. **POLA**, near the tip of the peninsula of Istria, is a fortified naval harbour, and **FIUME**, at the head of the Gulf of Quarnero, is another free port belonging to Hungary. The quaint little walled town of **RAGUSA**, at the south of *Dalmatia*, once rivalled Venice in importance. *Bosnia* and *Herzegovina*, two thickly-wooded pro-

vinces south of the Save, are part of the Turkish empire, occupied and ruled for a time by the Austrians. The one important town is **SERAJEVO**, and the chief industry of the people the keeping of **swine**. The narrow province of *Croatia-Slavonia*, between the Save and Drave, has been appropriately called the *Hungarian Mesopotamia*.

**187. Central Provinces.**—*Austria-proper*, the political centre of the monarchy, lies in the Danube valley, between the Alps and Bohemia. Here **wine** is largely made, and industries of many kinds flourish. *Vienna* (*Wien*, 1270), on the right bank of the Danube, which is here kept in an artificial channel lined with busy quays, is the capital, and one of the finest cities in Europe. Long the eastern outpost of European civilisation, it was twice besieged by the Turks, but new importance has come to it through the railways which link the Adriatic with the Baltic, and the North Sea with the Black. Its great university and hospital attract students from all parts of the world. **LINZ**, farther up the Danube, is important for its river trade, and the little town of **STEYR**, on the Ems, sometimes called the *Birmingham of Austria*, manufactures the **iron** mined in the neighbouring hills. *Moravia*, a succession of hilly terraces, draining to the Danube, where the best **hops** in Europe are grown, and the little province of *Silesia* to the north (adjoining German Silesia) are rich in **iron** and **coal**. **BRUNN** (90), an active factory town, is built round a rock-perched castle, the *Spielberg*, once a state prison. The battlefield of **Austerlitz**, where Napoleon gained a great victory over the Austrians and Russians in 1805, lies a few miles to the east.

**188. Bohemia.**—There is good reason for *Bohemia* being claimed as the "brightest diamond in the Austrian crown," but it is held there by force. The Bohemians, aspiring to form an independent Slav kingdom, hate their German and Jewish fellow-citizens. The **Elbe** and its tributaries flow to Germany through a gap in the steep mountain ranges. Magnificent beech and pine forests still shelter the wild boar and the bison; **coal** and **ores** of all kinds abound, agriculture is prosperous, and manufactures flourish, Bohemian glass-ware being celebrated over

the world. PRAGUE (180), on the Moldau, is a city of ancient palaces and churches, relics of its old political greatness, and of modern factories springing up on account of the underlying coal. It was the birthplace of Huss, who preached Protestantism a century before Luther. The **Czech language**, nearly extinguished by the Germanising Austrians, is again recognised, the great University of Prague having two sets of professors and double lectures in German and Czech. PILSEN, on a coal-field to the south-west, contains famous breweries. At the battle of KONIGRATZ (or *Sadowa*), in the east, the Prussians defeated the Austrians in 1866 by using the new needle-gun. In the north-west, along the slope of the Ore Mountains, the famous mineral springs of TEPLITZ and CARLSBAD attract hundreds of health-seekers.

**189. Eastern Provinces.**—*Galicia*, including part of the kingdom of Poland on the wooded Russian slope of the Carpathians, is joined by the Vistula to the Baltic, and by the Dniester to the Black Sea, and direct railways between the two seas are developing the district. The people are mainly Slavs, Poles in the north, and ignorant Ruthenians (Russians) in the south. But this, together with the neighbouring parts of Russia, is pre-eminently the land of the Jews, who flourish by trade and money-lending, while the peasants toil in the deepest poverty; in BRODY, a small town on the Russian frontier, three-quarters of the inhabitants are Jews. Near LEMBERG (110), a very ancient town with a university, there is a badly-worked petroleum district. CRACOW, on the Vistula at the Russian frontier, was the ancient capital of Poland. The old Polish kings were buried in its cathedral, and within the walls of the strong modern fortress rises a rough granite monument to the patriot Kosciuszko. Close by the small town of WIELICZKA has grown up round the greatest mass of rock-salt in the world, which eight centuries of mining have not exhausted. In one of the largest of the pillared halls, hewn out of solid salt far below daylight, a little village has been built, where children have been born, and lived and died without ever seeing sky or fields or trees. The vaulted chapel, crowded with statues all carved of the clear and dazzling



salt, flashes out brilliant colours when lighted with its multitude of candles.

190. The **Kingdom of Hungary**, hemmed round by mountains, has its highest point in the **Tatra**, to the north, which sinks southward into the lower ridges of the **Hungarian Ore Mountains**. The rugged wooded heights of *Transylvania* (in German *Siebenbürgen*) fill up its eastern angle. Two shallow lakes, the **Platten See** or **Lake Balaton**, and the small **Neusiedler See**, still remain in the west, relics of the former expanse (§ 91). Between the rivers wide steppe-lands, called **Pusztas**, extend as far as the eye can reach, watered only by stagnant pools or artificial wells, but covered with grass in spring, and supporting vast roaming herds of horses and cattle. Recently much of this land has been planted with trees, and still more of it sown with wheat and maize, especially in the rich district of the *Banat* in the south, bordering the Danube. In the valleys of the hill-slopes the vine is productive, and the wines of **TOKAY** in the north, and **KARLOWITZ** in the south are highly esteemed.

191. **Towns of Hungary**.—**BUDA-PESTH** (420), the capital, consists of two towns, ancient *Buda* or *Ofen* on the right, and *Pesth* on the left bank of the Danube, 150 miles below Vienna. The poverty of most of the inhabitants is extreme, and the death-rate very high. The stately public buildings, churches, and palaces are giving place to steam flour mills grinding the wheat of the plains. **PRESSBURG**, in the *Porta Hungarica* or "Gate of Hungary," where the Danube breaks across the Carpathians from Austria, was long the crowning place of Hungarian kings. **SZEGEDEN**, on the Theiss, is important as a railway centre, but is often damaged by floods, a rise of 13 feet in the Danube 90 miles distant being sufficient to reverse the current of the sluggish Theiss right up to the town. **DEBRECZIN**, on the northern Puszta, is a typical Magyar town, the brightly painted houses are set down at long intervals in very wide streets, and trade is carried on chiefly at great fairs. In the mountain borderland the old-fashioned towns usually cluster round some great basaltic rock, on which the mine-owner or vine-

grower has his ancient castle, such are SCHEMNITZ and KREMNITZ in the metalliferous Ore Mountains of the north, and KRONSTADT in Transylvania, which was once the *treasure chest of Europe*, on account of its gold mines. ORSOVA, in the Iron Gate, stands at the eastern portal of Hungary, where the Danube breaks through the Carpathians a second time, and leaves the country.

## CHAPTER IX

### SOUTHERN EUROPE AND WESTERN ASIA

#### ITALY.

192. The kingdom of **ITALY**, rather smaller than the British Islands, occupies the central peninsula of Europe. It is shaped like a top-boot, and the triangular island of **Sicily** looks on the map as if it were being kicked over to Africa. The rectangular island of **Sardinia**, to the west, is like a ragged, empty sleeve, the severed hand of which (*Corsica*), although 'belonging to France, points northward to continental Italy. The northern frontier runs irregularly along the **Alps**, bounding France on the west, Switzerland and Austria on the north. The eastern boundary from Austria is an artificial line drawn from the Alps to the head of the **Adriatic Sea**.

193. **Surface and Rivers.**—Italy comprises the steep slope of the Alps, sheltering a series of deep fjord-like inland lakes, of which the three largest, **Maggiore**, **Como**, and **Garda** are the most beautiful in the world. Their clear blue waters reflect the silvery olive-groves and vineyards of the shores, the bright green oak and dark pine forests of the mountain-side running up through a strip of grassy pasture land to the high black crags crested with spotless snow. Rivers from these lakes flow down to the flat plain of *Lombardy*, and join the chief river of Italy, the **Po**, flowing eastward, banked high above the adjacent land, to a delta which advances every year farther into the shallow **Adriatic**. The **Apennines**, curling round from the western Alps, run along the peninsula, and reappear in **Sicily**. Towards the

north of the range the beautiful **Arno** flowing west, and the yellow **Tiber**, pouring its turbid waters southward, rise close together. The **west coast** has deep water, and is broken by a succession of fine bays, with capes between, continued seaward in little groups of islets, but the **east coast** is shallow and nearly featureless. Flat, fever-haunted marshes stretching at the base of the mountains are now being drained and made healthy by the planting of **Eucalyptus** trees. Active **volcanoes** shake the southern districts and the neighbouring islands with occasional eruptions; and earthquakes, sometimes causing great damage, are common. There is no coal in Italy, but valuable **iron-ores** have been mined in the Isle of Elba for centuries, and **iron**, **copper**, and **asbestos** occur, though little worked, in the Alpine slopes. The finest white **marble** is quarried at **CARRARA**, in the northern Apennines, and in *Sicily* there are great mines of **sulphur**.

**194. Climate and Crops.**—The rainfall is abundant, but almost confined to autumn, when the rivers are subject to sudden and serious floods. In the north the winters are often cold, and snow sometimes falls, but in the south they are warm and pleasant. Summer is everywhere very hot, and, as in Spain, the **sirocco** or hot wind from Africa, and the **mistral** or cold wind from the Alps often bring about great extremes. The sky in Italy is intensely blue, and the air singularly clear, so that the grand scenery and fine architecture are sharply visible at great distances. **Wheat** is the chief grain crop, but **maize** is largely grown, its flour forming the unwholesome food of the poor (*polenta*). In the hot low lands of Lombardy, watered by canals constructed ages before those of Holland, **rice** is extensively raised. The **vine** flourishes, and Italy is second only to France in wine raising; the **olive** produces its oil-yielding fruit in abundance; **chestnuts** are cultivated for food, and mulberry trees support swarms **silkworms**. In the south **dates**, **figs**, **oranges**, and similar fruit are as plentiful as in Spain. Cattle-raising is pursued as of old in the Alpine valleys. The original name of Italy meant "**cattle**." **Butter** and **cheese** are largely exported, and so are **hens' eggs**

in millions, but silk, wine, and olive oil are the characteristic and largest exports.

**195. History.**—The ancient **Romans**, an early Aryan people coming after and mixing with the Kelts, conquered nearly the whole known world. To this day the solid stone causeways they built throughout Europe, in the time when all roads led to Rome, remain in use. This Empire of stern soldiers became weak as it grew wealthy. The **Teutonic** tribes of the north, and more savage hordes from the east, won back their old lands and invaded Italy, breaking the Empire into two parts, the western and eastern. At a later time the **Arabs** came from the south and took possession of *Sicily* and some parts of the peninsula. From these mixed races the **Italian people** have sprung, speaking a language which, like French and Spanish, is derived from the classic Latin. The *Cæsar* or nominal Emperor of Rome throughout the Middle Ages was a German, and this is why the name of *Kaiser* is still retained by the German and Austrian Emperors. The **Pope**, the head of the Roman Catholic Church, gradually grew to rival the Emperor in power, and governed all Christendom from his huge palace, the **Vatican**, in Rome. Numerous commercial republics, such as those of Genoa and Venice, sprung up in the peninsula during the Middle Ages; but their power declined when the Portuguese and Spaniards discovered the Cape route to India and the new world of America. After a temporary union under Napoleon's iron rule, Italy became a group of separate states, including the kingdom of *Sardinia* on that island and the north-west of the peninsula, the duchies of *Tuscany*, *Parma*, and *Modena*, the Austrian provinces of *Lombardy* and *Venetia* on the great plain and the Adriatic shore, the kingdom of the *Two Sicilies* in the south, and the *States of the Church*, where the Pope was absolute master around Rome. The King of *Sardinia*, with French aid, captured *Lombardy* from Austria in 1859. The following year his patriotic general, Garibaldi, zealous for a free and united Italy, conquered the *Sicilies* and extended the kingdom. In 1866 Austria gave up *Venetia*, and finally, in 1870, the French soldiers who had kept the Pope in his possessions were recalled to repel the German invasion, and **United**

Italy was completed by the King entering Rome. Since that time the Pope has never left the Vatican, nor acknowledged the government of the country.

196. One old little aristocratic republic in the rugged north-eastern Apennines has not been absorbed in Italy. Its name is **SAN MARINO**; its whole area is less than 5 miles square; yet though it does not even contain a printing-press, it keeps up a tiny army of its own.

197. **People.**—The Italians, being proud of their past, are determined to show themselves worthy of the great Roman empire and of the mercantile republics which followed it. The seaports are increasing in prosperity, the war navy is one of the strongest in Europe, and schools are being established everywhere; yet poverty and ignorance are widespread. Two-thirds of the grown-up people can neither read nor write, the great cities are full of beggars, and bands of *brigands* (robbers) still haunt the southern mountains. The prevailing religion is **Roman Catholic**, but other forms are now fully tolerated. The government is a strictly limited monarchy, but the parliament represents a small section of the people, for only those able to read and write can vote. The sweet-voiced dark-complexioned Italians are born artists; nowhere else in the world is such taste shown in decorating houses and churches, in painting and sculpture. The population is very dense, and many emigrants leave their country every year, going chiefly to **South America**; hundreds of Italian musicians and image-sellers wander through every country of Europe, but always return to their beloved Italy.

198. **Towns of the Plain and Eastern Italy.**—The kingdom is divided into sixty-nine small provinces corresponding to counties, but the old larger divisions are generally used for popular purposes. **MILAN** (300) is now the station for the **St. Gothard Railway**, but its vast white marble cathedral crowded with statues recalls its ancient glory as the capital of *Lombardy*. The neighbouring town of **BERGAMO** (like others near it) has a raw silk market to which the villagers of the lower Alpine valleys flock daily during the season with their baskets of cocoons

for sale. A railway at the base of the Alps runs eastward through VERONA, where the Brenner line joins, to VENICE (130), once powerful enough to control the commerce of the world, but now more famous for beauty than trade. A hundred and twenty islands linked by marble bridges support this *Queen of the Adriatic*, whose marble palaces rise straight from the warm glimmering water with broad landing stairs to which the silent gondolas glide. The lion of St. Mark still crowns its ancient column in one of the wide squares which lie between the network of canals.

TURIN (*Torino*, 250) in *Piedmont* (i.e. "Hillfoot"), a great silk-weaving city at a curve of the river Po, is the junction for the **Mont Cenis Tunnel** from France. The railway running south-eastward straight along the eastern slope of the Apennines past the grim fortress of ALESSANDRIA, the fine old ducal cities PARMA and MODENA, and BOLOGNA (100), with its 800 year-old university, follows the old *Emilian road* which gave its name to the province. The railway threads its way past the busy Adriatic port ANCONA under the shadow of the **Gran Sasso** or *Great Rock* (9500 feet high), the chief summit of the Apennines, in the rugged province of *Abruzzos*, to the antler-shaped harbour of BRINDISI in *Apulia* near the heel of the "boot," whence the great Australian and Indian mail-steamers sail. The mountainous provinces of *Basilicata* and *Calabria* surround the square Gulf of Taranto, and are peopled by the most ignorant, superstitious, and lawless of the Italians.

\*199. Sicily, separated by the Strait of Messina, where the whirlpools of *Charybdis* and *Scylla* are no longer a terror to sailors, possesses a fine harbour in the earthquake shaken MESSINA. Mount Etna, in spite of its frequent eruptions, is surrounded by a necklace of towns, the largest being called CATANIA (100) from its proximity to the mountain. There are no small villages in Sicily, even the farm servants live in towns, walking a long way to their work. SYRACUSE, on the south, is near the old Greek city where Archimedes lived and worked out his great discoveries. MARSALA, on the west, exports the wine called after it, and, greatest of all, PALERMO (200)

raises its palm-shaded domes from a bare rocky height on the north coast. The little Lipari islets include the ever active volcano of **Stromboli**, whose red glare is a natural lighthouse, and **Vulcano**, called after Vulcan, the god of Fire, whence comes the name *volcano*.

**200. Towns of Western Italy.**—On the west coast of the mainland the blue Tyrrhenian Sea ripples over the sand of the crescent-like curve of the **Bay of Naples** between the picturesque islets of *Capri* on the south, and *Ischia* to the north. In the centre of the curve **Mount Vesuvius** raises its massive cone, marked by steaming lava-streams and subject to sudden outbursts of tremendous violence. **NAPLES** (460), the largest town of Italy, and one of the most beautiful, may still be called *Neapolis* or New City, in contrast with the buried streets of **Pompeii** and **Herculaneum**, two small Roman towns suddenly overwhelmed by lava from Vesuvius in 79 A.D., and recently partially excavated. **Rome** (270), a name associated with the military might of the Cæsars long ago, and the tyranny of the Popes in the Middle Ages, is now the capital of Italy. Standing on the difficultly navigable Tiber, and hemmed round by unhealthy plains and mountain barriers, it is of little commercial importance, but it is full of such ruins as the **Forum**, the **Coliseum**, where the fights of gladiators took place, the triumphal arches of Roman victors, and the dark labyrinth of the **catacombs** underground, where the early Christians buried their dead. **Huge St. Peter's**, with its majestic dome and wide-spreading colonnades, is the chief of the 365 churches whose spires stand out against the Roman sky. **LEGHORN** (*Livorno*), a trading seaport of *Tuscany*, is joined by rail through **PISA**, celebrated for its leaning tower, to **FLORENCE** (*Firenze*, 130), the artistic centre of the world. The collections of pictures there are unrivalled, and no other town has been the birthplace or home of so many famous men in the past—Dante, Galileo, Savonarola, Michael Angelo, and many others are amongst them. The strong naval harbour of **SPEZIA**, and the commonplace thriving mercantile seaport **GENOA** (140), “the superb,” make the picturesque but barren mountainous province of *Liguria*



of vast importance. In *Sardinia*, although nearly as large as *Sicily*, the only important town is the harbour of CAGLIARI in the south, where one branch of industry has given the name of *sardines* to a small fish which is exported preserved in oil.

201. *Malta*.—A group of three small islands due south of Sicily forms the British Crown colony of **MALTA**, maintained as a naval station on the road to India. The port of VALETTA, in the largest island, is strongly fortified and always occupied by a British garrison. The rocks are scarcely covered with earth, much of which was imported from Sicily, but the fertility is great in spring, and the earliest potatoes for the London market are grown here.

#### THE BALKAN PENINSULA.

202. *Surface*.—In the north-east this peninsula is bounded by the steep southern slope of the **Transylvanian Alps**, at the base of which the great plain of the **Danube**, hemmed in on the south by the **Balkan** chain, sweeps eastward to the **Black Sea**. The west and south are filled with rough irregular mountain ranges confusedly massed, and usually thickly wooded. The **Rhodope** Mountains wall in the wide triangular valley of the **Maritza** to the south-west. **Mount Olympus**, the highest summit of the region, viewed by the ancient Greeks with sacred awe as the dwelling-place of the gods, rises in solitary grandeur on the east coast exactly in 40° N. The **Pindus** Range runs down the centre of the peninsula, being continued by **Mount Parnassus**, the fabled haunt of the Muses, to the chains that fill the almost detached peninsula of **Morea**, whose *isthmus* gave that name to geography. It is impossible to describe the rich indentations of the southern coast, which is connected with the similar shores of the **Ægean Sea** in Asia Minor by the Grecian Archipelago, hundreds of

“Sprinkled isles

Lily on lily, that o’erlace the sea

And laugh their pride when the light wave lisps Greece.”

On the map the lands of Ancient Greece look like the skeleton of an outstretched hand, a powerless relic of past strength. The

Black Sea coast of the peninsula is very shallow, little indented, has no islands, and is broken by only one river of importance, the mighty Danube. The climate is throughout warm and sunny, except on the mountains, resembling that of Italy; but only on the river plains and valleys is the soil fertile, the rest of the region is better adapted for forests and pasture-lands than for agriculture. Minerals are abundant, but scarcely touched, and centuries of bad government have let many grand Roman roads fall into utter disrepair. Except in the plain of the Danube there is but one great railway, and this was completed only in 1888. Crossing the broad melancholy Save at its junction with the Danube, the line runs up the Morava valley, and bifurcates on a barren granite high plain, one branch crossing to the valley of the Vardar, and descending it southward to Salonika, the other passing south-eastward over the rugged heights south of the Balkans down the fertile Maritza valley and on to Constantinople.

**203. People.**—Albanians, mountaineers of a very ancient race, live in the west; in the south are Greeks, descended and degenerated from the early Aryan settlers; in the south-east dwell the Ottoman Turks, a warlike Mongolian race, named after the Caliph Otho who led the invasion of Europe. Farther north there are Bulgars, originally Mongolian, but now merged with the Slavs, who form the greater part of the population, and Rumans, the descendants of the Roman colonists in the days of the Eastern empire. Jews and gipsies are very numerous.

**204. History.**—No part of Europe has a more eventful history than this, and changes in boundaries are still in progress. The separate states of Greece occupying the south of the peninsula had been part of the Roman empire for centuries before Constantine, the first Christian emperor, gave his name to Constantinople, which became the capital of the Eastern empire. Repeated invasions broke up this monarchy; the Bulgarians founded a great empire, the Slavs formed the kingdom of Servia, and other states were made by northern invaders, but the Arabs and Moors who conquered the Iberian and Italian lands in the Middle Ages were successfully repulsed. In the beginning of the

thirteenth century the terrible Turks, who had forced their way through Asia Minor, conquering as they passed, began to pour across the narrow strait. All Europe was combined against them, but they captured Constantinople in 1453, and spread in a triumphant wave over the entire peninsula, northward through Hungary, and eastward round the Black Sea, blotting out all the existing nations. The oppressed Christians under Turkish rule never ceased to struggle for freedom, and since the seventeenth century Turkish power has diminished, while the old nations have revived one by one. *Greece*, whose war of independence is celebrated in the poetry of Byron, became free in 1830, the Slavs and Rumanians of the north gradually acquired self-government. Finally, Russia made war with Turkey in defence of the remaining Slav provinces, after which the Sultan agreed to the Treaty of Berlin in 1878, which made *Servia* and *Rumania* independent kingdoms, *Montenegro* a free principality, attached *Bosnia* to Austria-Hungary, gave several possessions on the Black Sea to Russia, enlarged Greece, and restored *Bulgaria* to the position of a self-governing principality, only nominally subject to Turkey.

#### RUMANIA.

**205. RUMANIA**, proudly retaining the name, and in a modified form the language of the Romans, stretches from the wooded valley of the southern slope of the Transylvanian Alps and Carpathians (where the gipsies still catch and tame **brown bears**) over the level plain, being bounded by the Pruth on the east, and the broad Danube on the south. The *Dobrudscha*, a strip of the Black Sea coast, including both banks of the Danube and its entire delta, is part of the country. The district of the fertile Danube plain was formerly *Wallachia*, the slope of the Carpathians to the east *Moldavia*, but the people are the same in both—the men dignified, and the women particularly graceful. The prevailing religion is that of the Greek Church, resembling the Roman Catholic in many points, but not under the control of the Pope at Rome. Education is well cared for. Agriculture is the leading industry, wheat being

grown almost entirely for export, and **maize** mainly as food for the people.

**206. Towns.**—**Bucharest** (220), the "*Joyful City*," is the capital, in the middle of the fertile plain with good railway communication. At its port, **GIURGEVO** (20 miles distant), on the Danube, the international council, which manages the navigation of that river, meets. The Danube, unlike other rivers, is an **international highway** free to the vessels of all nations from the *Sulina mouth* (the only one of the three entrances kept open for vessels by engineering works) to the Iron Gates. **GALATZ**, where there is a sharp bend, is the chief harbour for ocean-going grain ships. The beautiful and finely situated **JASSY** (100), on the Russian frontier in the north, was formerly capital of Moldavia.

#### SERVIA.

**207. SERVIA**, south of the Save and the Danube, and west of Rumania, is a mountainous land rustling with oak and beech forests, overrun with herds of hungry swine which, when sold, are sent to Hungary or Rumania to fatten. The Servians or *Serbs* are a purely Slav race, whose boast is that they have no nobles because they are all noble; but though brave and honest they are lazy. Their fine forests have been almost destroyed in many places, and not replaced, and farming is carried on in a very old-fashioned and wasteful way; but mines have lately been opened which promise prosperity, as the ancient rocks of the country conceal both coal and metals. The old Roman road to Constantinople followed the same track as the new International railway which starts from **Belgrade** (*i.e.* *White Tower*, 40), the capital, at the junction of the Save and Danube, and runs up the rocky valley of the Morava to **NISCH**, where the lines for Constantinople and Salonika diverge.

#### MONTENEGRO.

**208.** The little principality of **MONTENEGRO** (*The Black Mountain*) is the home of a wild and warlike tribe of Slavs, whose exploits as robbers have fixed the name of Black or Bad

on their ragged gray limestone mountains. They are thorough mountaineers, ignorant and superstitious in spite of education laws, but loyally obeying their prince, who rules as an absolute monarch. The Treaty of 1878 brought them the little Adriatic seaport of DULCIGNO, and good roads have only recently been made from the capital CETTINGE to the other villages and to the coast.

### BULGARIA.

209. **BULGARIA**, separated from Rumania by the lower Danube, extends southward over the granite high plain which separates the valleys of the Morava and Maritza, where its capital **Sofia** (20) is a station on the International railway. The convent-dotted Rhodope Range (in Turkish called *Despoto Dag*h or Mount of Monks) with its steep peaks forms the southern boundary. The Balkan Mountains forming the northern buttress of this high plain curve eastward to the Black Sea, falling with a gentle slope covered with woods and cultivated fields to the barren Danube plain on the north, and sinking abruptly to the fertile Maritza valley on the south. The **Shipka Pass** crossing this range, and the northern fortress of **PLEVNA**, were the scenes of great battles in 1877 between the Turks and Russians. **TRNOVA**, the ancient capital, a quaint town on one of the lovely river valleys of the north Balkan slope, **RUSTCHUK**, a Danube port opposite Giurgevo, and the harbour of **VARNA** on the Black Sea, with a railway to Rustchuk, are the principal towns of Northern Bulgaria. In Southern Bulgaria (known as *Eastern Rumelia* while a province of Turkey), **PHILLIPPOPOLIS** (named after Philip of Macedon), on the International railway, is a manufacturing town. The **Bulgarians** have suffered more from Turkish oppression than any other people, but have now a free democratic government, and are slowly improving in education. Besides the growth of **grain** and the rearing of **swine** and **sheep**, **roses** are greatly cultivated. The air of whole districts is scented by the perfume of fields of bushes which supply honey to swarms of **bees**, and are distilled every year by the ton to form a few ounces of the precious **otto of roses**.

## GREECE.

**210.** The modern kingdom of **GREECE** has regained from Turkey much of the land which was held by the ancient nations, the memory of whose greatness gives interest to every hill and island of the little country. But only one-quarter of the *Hellenes* or Greeks live in the independent country; the rest are scattered through the islands and continental provinces of Turkey, all speaking a **language** closely resembling classical Greek, and members, as a rule, of the **Greek Catholic Church**. They are a nation of sailors and traders; they have a keen eye to business, and can even get the better of Jews in a bargain, but they are often dishonest and quarrelsome.

**211. Towns.**—Continental Greece contains the agricultural plain of *Thessaly* in the north-east with one important modern town **LARISSA**. Farther south **Thermopylæ**, where hot springs flow as of old, is no longer the narrow pass between the *Æta* Mountains and the sea that the famous Three Hundred defended, for a neighbouring river has silted up the shore into a wide low plain. **Athens** (90), in the south-east, is again the capital, and a new city of white marble is rising amidst the ruins of 3000 years under the shadow of the **Acropolis**, still crowned by the severe but stately columns of the ruined **Parthenon**. The **PIREUS**, as fine a harbour as ever, is 7 miles distant by rail. A railway also crosses the narrow isthmus to **CORINTH**, and runs along the north coast of the *Mora* beneath a mountain wall in view of *Helicon* and *Parnassus* which towers over the vineyards across the gulf, to **PATRAS**, a flourishing seaport where olive oil and **currants** (so named from *Corinth*) are shipped. The *Ionian Islands*, on the west, of which **Corfu** (the Gibraltar of the Adriatic), **Cephalonia**, and **Zante** are the largest, were ceded to Greece by the British Government, which had possessed them since the beginning of the century. On the east the long island *Negropont* is separated by the tumultuous strait of **Euripus**, where Aristotle is said to have drowned himself because he could not understand the cause of its currents. Little *Paros*, with

marble quarries like its neighbour *Naxos*, is the centre round which clusters the wheel-like island group of the **Cyclades**; but *Syra*, on account of its active harbour of **HERMOUPOLIS**, is the most important member of the group. Close to *Santorin*, in the south, there are volcanic islands which were upheaved from the sea-bottom not twenty years ago.

### OTTOMAN EMPIRE OR TURKEY.

**212. Boundaries.**—The hold of the invading Turks on the peninsula is now very slight, the “immediate” provinces of the great **OTTOMAN EMPIRE** being reduced to *Rumelia* in the south (the ancient *Macedonia* and *Thrace*), and *Albania* in the west; but the Empire stretches across the narrow strait and over the high peninsula of Asia Minor, along the south shore of the Black Sea, where its borders have been pushed southward by Russia. Two narrow strips diverge from the main body of the Empire in 30° N., that on the east comprising the broad, fertile valley of Mesopotamia and the western shore of the shallow Persian Gulf; that on the west side occupying the harbourless east coast of the Mediterranean and the mountainous east coast of the Red Sea. The entire area is 6½ times that of the United Kingdom, but only ⅓th of it is in Europe. The Ottoman Emperor or Sultan is nominally the lord of Egypt, which pays him tribute, and ruler of Tripoli in Africa.

**213.** The island of **CYPRUS**, resembling in outline the head of a shrimp, is a British Crown colony, although the Sultan is recognised as nominal head and receives part of the revenue. There is one seaport, **LARNACA**. Although Cyprus gave its name to copper, which was chiefly mined there in ancient times, the island is now purely agricultural—**vines, cotton, dates, sugar**, and other semi-tropical vegetation being grown.

**214. Government and People.**—The government of the Ottoman empire is **absolute**, the Sultan’s word is law, although he must rule according to the precepts of the Koran. But as the government of the provinces is given to officials, *Pashas*, who sell the right of collecting taxes to any one willing to run the

risk of repaying himself by oppressing the people, the land is badly governed, and the ignorant peasants are kept abjectly poor. The settled Turks are a peaceable and home-loving people, tolerant of strangers who hold different views, and calmly resigned to any misfortune which may befall themselves; "*Kismet*" (*It is fate*) is an expression in continual use. Many races with many religions people the Empire, but **Mohammedanism** of the orthodox form called *Sunnite* is most widespread, the Sultan being the "Commander of the Faithful," or head of that religion. Every village has its domed **mosque**, with a slender minaret from which a man calls the people to prayers at stated times every day, as the *Koran* prohibits the use of bells. Mohammedans always wear their turbans or caps, but take off their shoes in the mosque or at home. Women are rarely seen in the streets, and then closely veiled; they are kept secluded in special rooms in the house, and are greatly despised. A man may have as many as four wives if he can afford to keep them. Strong drink is prohibited, and the true Turks are consequently a sober people, greatly addicted, however, to smoking the fine tobacco grown in their European provinces. The chief industry of the Empire is **agriculture**, badly managed, although **carpet-weaving** and some other manufactures are carried on lazily.

**215. Towns of Turkey in Europe.**—The wild mountains of *Albania*, extending from Servia to Greece, and including the ancient *Epirus*, are peopled by a fierce and handsome race, whose bravery in war and plunder has never been surpassed. Many have become nominal Mohammedans, and all are as ignorant as they are daring and vindictive. The want of roads and towns, and the inhospitable character of the people, make *Albania* the least visited part of Europe. Ancient *Macedonia* is full of fertile valleys, like that of the Vardar, down which comes the railway from Servia to **SALONIKA** (formerly *Thessalonica*), a sea-port which may become one of the first in the Mediterranean from its position on the *Ægean Sea*. The trident-shaped *Chalcidice* bears the celebrated Mount **Athos** on its eastern peninsula, where 9000 monks dwell in seclusion, and no woman has been allowed to enter this strip of land for 1400 years. Ancient



*Thrace*, the lower valley of the *Maritza*, is in great part a dreary and unhealthy plain. *GALLIPOLI*, on the *Dardanelles*, the first European capture of the Turks, is their chief naval station. *ADRIANOPLE* (100), named after the Roman Emperor *Hadrian*, has several manufactories in its tree-shaded streets. *Constantinople* (900, anciently *Byzantium*) is unequalled for position, standing on the narrow *Bosphorus* (literally *Oxford*), where the sea-pathways to east and west cross the land roads to north and south. The beautiful channel of the *Golden Horn* curls inwards from the *Bosphorus* between the city of the Turks or *Stamboul* (where the great Church of *St. Sophia*, now a mosque, raises its vast and graceful dome above a crowd of slender minarets), and the suburbs of *Galata* and *Pera*, where most of the foreign merchants live. *Scutari*, on the Asiatic side of the strait, is another suburb.

**216. Towns of Asia Minor.**—Asia Minor was the original home of most of the domestic plants and animals spread over the civilised world. The chief wild creatures of the region are now the bear, wolf, jackal, and the long-tailed little jerboa. As the *Ionia* of the earliest Greeks, it was the birthplace of *Homer*, *Pythagoras*, and *Herodotus*, and it is full of ancient historic cities, including the ruins of *Troy* and of *Ephesus*, *Pergamos*, and the rest of the "seven churches of Asia." *Locusts* are a plague to the farmer, and storks are protected in order to feed on the dreaded insects. The inhabitants are largely Greeks, who also people the *Sporades* in the *Ægean Sea*, and the great island of *Crete* midway between Asia Minor and Greece. *SMYRNA* (200), on a splendid bay right opposite *Athens*, is the great commercial centre of *Anatolia* (or Turkish Asia Minor). Short railways into the interior bring down agricultural and forest produce for export; whole shiploads of *valonia*, the acorn-cups of a small oak, and immense quantities of dried fruits, especially figs, being sent out. The barren steppe-lands of *Angora* (the ancient *Galatia*), on the central high plain of the peninsula, is best known from the wool of its fine-haired goats. *SINOPE*, a harbour on the *Black Sea*, witnessed a famous sea-fight in the *Crimean War*, when the Turkish fleet

was destroyed. Turkey includes the western slopes of the mountainous high plains of *Armenia*; the majestic snow-wrapped summit of **Mount Ararat** shooting up 1000 feet higher than Mont Blanc, marks the point where Turkey, Russia, and Persia meet. The **Armenians** are a Christian Aryan race, but more than half of them live scattered through other countries, even in Britain, as merchants and bankers. The less cultivated **Kurds**, another native race dwelling round the shores of the great **Lake Van**, remain in their own land. At **ERZERUM**, on the western Euphrates, where the streets are blocked with snow for half the year on account of its altitude, the camel caravans from Persia halt on their way to the port of **TREBIZOND** on the Black Sea.

• **217. Mesopotamia.**—The powerful empires of *Chaldea* and *Assyria* grew up and disappeared in the plains of Mesopotamia, the ruins of *Babylon* on the **Euphrates**, of the “exceeding great city *Nineveh*” on the **Tigris**, and the numerous rock sculptures and arrow-head inscriptions on ancient clay tablets alone remain to tell their greatness. **BAGDAD** (100), on the **Tigris**, had 2,000,000 inhabitants when it was the capital of the Saracen empire “in the golden prime of good Haroun-al-Raschid,” the hero of the *Arabian Nights*; but it too has lost its old splendour, though still full of grand mosques and half-ruined palaces lining filthy streets, which are overrun with half-wild dogs, the only scavengers. The *Shat-el-Arab* or united stream of the **Tigris** and **Euphrates** flows through groves of the richest **date-palms**, their golden fruit being exported in immense quantities from **BUSSORA**. A telegraph line from India passes along the Euphrates valley and through Asia Minor to Constantinople.

**218. Arabia.**—Although only some of the coast margin of the great Arabian peninsula is occupied by Turkey, the whole is one country as far as the people are concerned, and the free high-spirited **Bedouin** or *Arabs*, who have led a wandering life unchanged in their ways for thousands of years, care little in whose territory they may happen to be. The Arabs, although a Semitic people, are faithful Mohammedans, following the Sunnite

traditions; they are remarkable for their powers of endurance and temperance, taking food only once a day, for their hospitality and absolute truthfulness. Though content with little, all they have must be of the best; the **Arab horse** is the finest breed in the world, the **Arab ass** is a noble and beautiful animal, and the **Arab camel** carries its heavy burdens uncomplainingly over the desert for days at a time without either food or drink. Most of the peninsula is waterless and barren. No explorer has yet ventured into the soft shifting sands of the south, and the intense heat and driving sands of even the northern deserts cannot be borne by any but the hardy natives. The **coffee shrub** was first cultivated on the slopes to the Red Sea; **gum** yielding acacias and drugs of various kinds are also grown, but the **date-palm** is the main support of the people. **Lions, panthers, ostriches**, and several kinds of antelope are found in some parts of the peninsula.

The independent State of **OMAN**, at the south-eastern corner, contains the important harbour of **MASCAT**, just outside the Persian Gulf; this is the most thickly peopled part of Arabia, and in the days of the *Sabians* it maintained a powerful fleet.

The British fortress and coaling station of **ADEN**, on the south-west, has one of the best harbours in the world, and the hottest and driest climate. For months at a time the garrison have to distil sea-water for drinking and washing purposes.

The western coast of Arabia along the Red Sea is under direct Turkish rule, forming the provinces of *Yemen* in the south, with **MOCHA**, where coffee was once exported, *Hedjas* in the centre, and *Arabia Petraea* in the north. In *Hedjas*, **JEDDAH** is the busy seaport of **MECCA** (70 miles inland), the holy city where Mohammed was born. Since every good Mohammedan must see the sacred mosque once in his life, caravan tracks converge on Mecca from all sides, and 100,000 pilgrims visit it every year. **MEDINA**, farther north, is the scene of the prophet's death. *Arabia Petraea*, east of the Gulf of Akabah, one of the forks of the Red Sea, contains the dead stone city of **PETRA** in a dismal gorge; its streets of temples and tombs hewn out of the solid rock have not yet been fully explored. The wild, rocky peninsula

of **Sinai** is politically part of Egypt. As in Arabia, the desert land is furrowed by dried-up *wadies* or beds of water-courses.

**219. Syria.**—The western fork of the Ottoman empire is far richer in sacred memories of the past than any other part of the world. In *Syria* the ruins of **Baalbeck** are the grandest pieces of masonry in existence. **DAMASCUS** (150), called the "*eye of the East*" from its appearance in a rich garden of verdure rimmed by red deserts, is still, as it has been for thousands of years, a manufacturing town. The Crusaders of the Middle Ages valued the Damascene sword-blades they captured from their Saracen foes, and carried them over all Europe; and the name of *Damask* was originally given to some of the costly fabrics from its looms. A road winds westward for 50 miles over the parallel ranges of the **Anti-Lebanon** where **Mount Hermon** stands, and **Lebanon** still darkened with cedar forests, which are peopled by *Maronites* and *Druses*, to **BEYROUT**. This is a seaport without a harbour, vessels having to anchor half a mile from shore.

**220. Palestine**, "the least of all lands" in size, is by far the greatest in the part it has played in history, as the ancient home of the Hebrews, and the centre from which the civilising light of Christianity radiated over the whole world. A narrow ridge of steep rocky hills runs parallel to the **Mediterranean** coast, on the highest part of which stands **JERUSALEM**, 2500 feet above sea-level, the mosque of **Omar** crowning the site of the ancient temple of Solomon. To the east the ridge sinks in abrupt terraces to the deepest sunk plain known. This is a narrow mountain-walled trough along which the **Jordan** flows from between the **Lebanon** ranges through the little Sea of Galilee to the **Dead Sea** below **JERUSALEM**, the surface of its intensely salt water being 1300 feet beneath sea-level. This land, once thickly peopled, "flowing with milk and honey," and producing the olive and vine in wonderful abundance, is now barren and full of ruined towns. The reason of this is that the forests have been felled, and the terraces once built along the hills have been broken down; winter torrents have thus washed away all the soil, and the fertility of the land, which enabled it to support a large population, has departed.



FIG 7—CROSSING THE STEPPES IN WINTER

## CHAPTER X

### EASTERN EUROPE AND NORTHERN ASIA

#### RUSSIAN EMPIRE

**221. History**—Various Slav tribes united to form the kingdoms of **Poland** and **Lithuania** in the centre of Europe in the early Middle Ages, whilst others, farther east and shut out from the sea on all sides by hostile nations, took the name of **Russians** from a Teutonic prince. The trading republic of **Novgorod** became one of the Baltic powers in the thirteenth century, when an invasion of Mongols or *Tartars* from the east subdued the rest of Russia. A new kingdom of **Muscovy**, with the capital at Moscow, threw off the Tartar yoke in the end of the fifteenth century, and absorbed Novgorod in the north, under Ivan the Terrible. Fifty years later the kingdom reached to the Caspian in the south, and still later captured **Siberia** to the east. Peter the Great in the beginning of the eighteenth century seized the south coast of the Gulf of Finland from the Swedes, and built St. Petersburg that his people might have a window towards western Europe. Under his successor the

Tartars of the Black Sea coast were conquered, the peninsula of Crimea taken, and at the close of the eighteenth century, when the rival Slav kingdom of Poland was destroyed and divided, the largest part was absorbed in Russia. At the peace of 1815 **Finland** was added to the domain of the Czars; the borders of the Empire had been extended over the Caucasus in the south, and included Armenia, as far as Mount Ararat, after the war with Turkey in 1878. The Siberian possessions grew until they covered the whole vast northern plain, to the Pacific Ocean on the east, and from the Arctic Sea to the buttress ranges of the Central Asian high plains. Russian rule is still extending over the Mongolian tribes to the south. **Alaska**, the extreme west of America, was colonised in the end of last century, but sold to the United States seventy years after; thus the Russian empire remains entirely in Eurasia.

**222. Boundaries.**—The Empire covers a continuous area 70 times that of the United Kingdom, or one-sixth of the land surface of the Earth, but hundreds of thousands of square miles can never be inhabited. The shortest line between the great naval fortresses of Cronstadt on the Baltic, and Vladivostok on the Pacific measures 1500 miles. In all the long coastline there is scarcely a seaport, and over the whole surface not one river that is not blocked with ice for months every year. The **Arctic Sea** is the only boundary on the north; on the west there are the Norwegian province of Finnmark, the river **Tornea** bordering Sweden, and the **Baltic**. From Memel southward the frontier is purely artificial, curving as far west as 18° E., where it borders Germany, then it sweeps round the Austrian province of Galicia to the rivers **Pruth** and **Danube** which mark off Rumania. On the south the frontiers are the Black Sea coast as far as **BATUM**, and then a line drawn irregularly across the Armenian high plain (disregarding the fine natural frontier of the **Caucasus**) adjoining Turkey and Persia, to the Caspian. Thence the boundary runs south-eastward to the border of Afghanistan, and at lat. 35° N. (within 300 miles of British India) turns north-eastward, pressing against the Chinese empire, along the slope of the great mountain buttress, follows the **Amur**

River for some distance, and finally turns southward along the Sea of Japan to the borders of Korea.

**223. Climate.**—The natural conditions of this vast area are of course various, but everywhere the climate is strongly continental, the rainfall is less, the winters are colder, and the summers hotter than those of any other places in the same latitude. The main traffic roads are the rivers and lakes, on which steamers ply, but these are only available during the summer months. The west of Russia is well supplied with railways, all under government control, and a great line is being constructed across Asia to the Pacific; but in the east caravans of the hardy Bactrian camels still carry the scanty merchandise across trackless wastes.

**224. Government.**—The Emperor, called *Czar* (i.e. *Cæsar*) of all the *Russias*, can make laws as he pleases, but a number of councils nominated by him direct the various departments of the central government. The Empire consists of eleven general governments with viceroys who represent the Czar, and these are divided into nearly a hundred special governments or provinces, subdivided into numerous small districts or parishes.

Liberty of speech is not allowed; it is a crime to say that the government is in error, or to express a wish for an elected parliament; and the police system is so perfect that all the doings of any man in the country can be watched and reported without awakening his suspicions. All foreign newspapers are examined by the police in the Post-Office, and anything these officers object to is blackened over so that no one can read it. As a result of this there are secret societies of all sorts, notably the relentless *Nihilists*, and very often one or more of the few universities is closed, because the students hint that they wish for political freedom. Education is greatly neglected, and Russia is "behind the times" in another way, for while all western Europe long ago adopted the Gregorian calendar, the Julian reckoning or *Old Style* is retained here, which makes the date twelve days behind. Thus, what is called the 1st of January in Russia is the 13th everywhere else.

The army in time of peace numbers about 750,000 men,

but in case of war its strength rises by calling out the reserves to over 2,000,000. The proportion of cavalry is large, for Russia being a low, undulating, thinly-peopled country every one can ride, and many horses are kept.

### EUROPEAN RUSSIA.

**225. Surface.**—European Russia, although only one-quarter of the Empire, is larger than all the other states of Europe put together. From the great northern watershed (§ 93, 3) the Petchora flows north to the Arctic Sea, the Dwina to the White Sea, the widely branching tributaries of the vast Volga unite to enter the Caspian, the Don and Dnieper pour southward into the Black Sea, while the smaller Duna flows westward to the Baltic. A few short canals put all these river systems, with over 20,000 miles of navigation, into communication.

In the extreme north the Arctic Sea is fringed with *tundras*, succeeded by a broad belt of great pine forests, in the clearings of which rye and oats are grown. Farther south the whole breadth of the land is covered with a rustling sea of oak, beech, and lime trees, with wheat and hemp fields in the open ground; in fact, nearly half of European Russia is under trees. Between the Carpathians and the Urals, south of the forest zone, a wide strip of deep vegetable soil is known as the *Land of the Black Earth*, here wheat and maize are grown in enormous quantities, although there are few trees, and in the south of it the vine ripens. Finally, round the Black Sea and the Caspian, and far to the east, there are *steppe-lands*, their rich grass grazed over by herds of horses and cattle in spring, lying as desert wastes of dust during the summer's heat. In winter they are plains of snow; the roads are only marked by a line of stakes, and the sledge of a chance traveller is often pursued by hungry wolves as shown in the picture (Fig. 7).

Bears live in many of the forests, and wolves are so common that thousands of sheep and nearly a hundred people are killed by them every year; but the squirrel is the most abundant



of the wild creatures. The sheep of the steppes is a curious animal, its big tail often yielding 40 lbs. of tallow.

**226. People.**—The inhabitants are mainly of the Slav race, and the established religion is that of the Greek Catholic Church; but there are Finns in the north, Tartars, Greeks, Turks, Circassians, and other tribes in the south; Germans, Rumanians, and many Jews in the west, each with their own forms of faith. Until 1861 most of the peasants were serfs, sold with the land they lived on; but Czar Alexander II freed them. Ignorance and poverty prevail to a frightful extent, and although there are a million more births than deaths every year, the general health is lower and the death-rate is greater than in any other country of Europe.

**227.** The Grand-duchy of Finland (*i.e. fen-land*) has so many lakes that the land almost resembles a sinking sieve. The people, although belonging to the Yellow type, have been stimulated by the severity of the climate and the barrenness of the soil, and so are enterprising and industrious. Unlike the Russians, they are well educated, and have a representative parliament, over which the Czar presides as Grand-duke. The State Church is Lutheran, as in Sweden. HELSINGFORS (50), the capital and a university town, is defended by the great fortifications of SVEABORG, built on seven islands off the harbour. WIBORG, farther east, is also a strongly defended port, and ÅBO is the most ancient city.

**228.** The three Baltic provinces, once the domains of the German knights, still contain a great number of Germans, mixed with the original peoples. The old Hanse port RIGA (170), on the Bay of Riga, at the mouth of the Duna, is one of the most important Russian seaports, sending out oats, rye, hemp, and timber. The harbour of REVAL, a picturesque town opposite Helsingfors, is free from ice longer than St. Petersburg, and imported goods go direct by rail to the capital. St. Petersburg (930) was planned by Peter the Great, simply on account of its position on the Baltic, before the western provinces were captured, and the forced labour of 150,000 workmen raised its wide streets and vast squares of regular stone buildings on a founda-

tion of wooden piles driven deep into the marshy ground. The straight railway to Moscow, 360 miles south-east, was the first built in Russia. The Neva, from Lake Ladoga, opens a summer water-way through canals to the Caspian and the Black Sea, more than 1000 miles distant. KRONSTADT, on an island off the mouth of the Neva, is an impregnable fortress, the strongest in the world, and until a ship canal was opened to St. Petersburg in 1885, it was the seaport of the capital.

229. **Northern Russia**, inhabited by the wandering *Lapps*, who tend their reindeer on the dreary tundras, and the heathen *Samoyeds*, a small nation of fishers and hunters, has only a few settlements of true Russians, and these are the most uncultivated of their kind. The pine-forests south of the tundras supply timber and tar for export at ARCHANGEL on the White Sea during the four unfrozen months.

230. **Poland**, no longer even a name politically, is struggling to retain its old Polish language and the Roman Catholic religion. Education is more general and industry much more developed than in the eastern districts, since it lies close to Germany and Austria, and contains part of the Silesian coal-field. LODZ (110) is the chief **cotton-spinning** town of Russia, but WARSAW (140) excels it in every other respect. This city, finely built in the form of a crescent on the left bank of the Vistula, is a university town, and 100,000 Jewish inhabitants ensure it active trade. It is a great railway centre, the lines converging from Germany and Austria, and diverging like an isosceles triangle 700 miles in the side to St. Petersburg and Moscow. The former line passes through WILNA (100), on the Niemen, once the capital of Lithuania, where wild bisons still roam in the forests; the latter skirts the north of the great **Pinsk marshes**, which are now being drained. A third railway runs to the south-east.

231. **South-western Russia**, in the basins of the Dniester and Dnieper, comprises the best of the *Black Earth Region*. Where the soil still remains uncultivated the flower-starred plains are all a-buzz with **bees**, and colonies of small burrowing rat-like creatures scamper through the rich grass. The navigation

of the rivers, which flow through gorges some hundreds of feet below the level of the plain, is interrupted by rapids formed by a broad strip of granite rocks which stretches across the south of Russia at the beginning of the Steppes. **Little Russia** (also called *Ukrania* or the Borders, as it was long the Tartar boundary) occupies this part of the country. The people are pure Slavs, poor like all Russian peasants, but intelligent, kindly, and brave. To protect themselves from the Tartars they formed mounted armed bands or **Cossacks**, who are now a race apart, and extend as a nation of warlike horsemen all along the Steppe region, especially in the lower valley of the Don. Instead of paying taxes like the settled people, they receive allowances from government and form special cavalry regiments in the Imperial army. **KIEFF** (170), on the terraces of the lofty right bank of the Dnieper, is a kind of Russian Mecca. Every year 300,000 pilgrims of the Greek Church visit the ancient shrine and rock-carved hermitages where Christianity was first preached in Russia. **KHARKOFF** (170), at the margin of the Steppes farther east, on the railway from Moscow to the Crimea, attracts thousands of the Don Cossacks to its January horse market.

**232. New Russia**, including the belt of Steppes bordering the Black Sea, is a cattle-rearing region, with a very mixed population, thousands of whom are waggoners carrying grain from the *Black Earth* farms to the seaports. **KISHINEFF** (120), in *Bessarabia*, near the frontier of Rumania, a straggling town of wealthy herdsmen and wine-growers, has a railway to **ODESSA** (270), the chief harbour. Although ancient Greek colonists named it after the hero of the Odyssey, the town is quite modern, and built of a very dusty sandstone. The rocky peninsula of the *Crimea* is best remembered for the war in 1855, when **Alma**, **Balaclava**, and **Inkerman** were made famous for battles, and the defences of **SEBASTOPOL**, now an unwall'd commercial town, were forced by the British and French armies. The narrow Strait of Kertch leads to the shallow Sea of Azoff, with the grain port of **TAGANROG** in the north; and beyond it, between the Don and its tributary the Donetz, lies the most important of the few coal-fields in the Empire.

**233. Great Russia** lies in the monotonous forest-covered basin of the Volga, the largest river of Europe, and forms the great central mass of Russia. The *mujiks* or peasants are strong men, broad-shouldered and broad-browed, with long hair and great beards. Less advanced and more ignorant than the Little Russians, they are absolute despots in their own households, and they reverence and obey the absolute Czar as a common father. They have unusual powers of imitation, whatever they see they can copy, any language they hear they can learn, and living in the midst of forests they are wonderful workers in wood, their skill with the axe being remarkable. The innumerable villages are built of wretched wooden huts, almost closed against light and air, very dirty, and heated by a huge stove, on the top of which the inmates sleep. The villages, fortunately for the health of the people, are often burnt down, the average life of a cottage being seven years. The great *samovar* or tea-urn is in constant use, the favourite tea being brought by caravans from China in the form of bricks.

**234. Towns of Great Russia.**—**MOSCOW** (750), on the little Moskva or *Mossy Water*, tributary to the Oka, was the old capital of all Russia. It is a city of brilliantly painted wooden houses, forming a maze of narrow, irregular streets, traversed by two concentric, circular roadways, with the gilt, bulb-shaped cupolas of a thousand churches, crowned with glittering crosses, rising high above them. The **Kremlin** or citadel, in the very centre, contains a wonderful pile of palaces and quaintly domed cathedrals, in one of which the Czars are crowned. Here the famous *King of bells*, weighing 200 tons, is preserved, although it was cracked in the casting, and never rung. Napoleon's retreat from Moscow, when the people burnt it rather than allow it to be taken, was one of the most terrible marches in history; and **BORODINO**, where the greatest battle of that campaign was fought, lies 70 miles west of the town. A hundred miles to the south, **TULA**, the *Birmingham of Russia*, has grown into a city of factories as it stands on a large coal and iron field. The **Oka**, nearly a mile wide, sweeps into the still greater Volga, 250 miles east of Moscow. Here the town

of NIJNI NOVGOROD has its population of 50,000 increased four-fold at the great annual fair in July and August, to which merchants come with their goods by rail, river, and caravan from all parts of Europe and Asia, even from India and China. From this point onwards the left bank of the Volga is low and flat, whilst the right bank, on which the stream is encroaching, is formed of a limestone cliff several hundred feet high. KAZAN (140), on the left bank, 200 miles below Nijni Novgorod, was long the capital of the Tartar Khans (or Kings), and is still the centre of a half savage Tartar community. Near this town the Volga is joined by the six-months' frozen Kama, which brings down timber, coals, and metals from PERM, where a short railway crosses the richest mining district of the Urals, passing EKATERINBURG on the eastern slope, and enters Asiatic Russia. The gold of this region makes Russia the chief gold-producing country next to Australia and the United States. SAMARA, on a loop of the Volga, is a station on the railway from Moscow to ORENBURG on the Ural River. Orenburg is a great caravan terminus, and fitly called the harbour of the Desert Sea. The Volga enters the sunk plain of the Caspian 700 miles below KAZAN, and curves sharply eastward. Here at the town of TSARITSIN barges are conveyed by railway to the Don 40 miles distant, and so reach the Black Sea; 200 miles farther is ASTRAKHAN, on the Volga delta, with a mixed population of Russians, Turks, and Persians, carrying on a great sturgeon fishery.

#### ASIATIC RUSSIA.

235. The Caucasus district, divided by the long line of snow-crested mountains rising from forests of fruit-trees, is inhabited by many different races. The robber Cherkesses, whose beauty and grace conferred the name of *Caucasian* on the White type, are almost extinct, but tribes of brave Circassians, song and dance-loving Georgians, Tartars, Armenians, and Russians in increasing numbers thinly people the land. From VLADIKAVKAZ (*i.e. Ruler of the Caucasus*), a strong new fortress and railway terminus on the north side of the range, a military road winds through the pass known for ages as the *Gate of Caucasia*,

under the giant heights of Mount Kezбек, one of six peaks all higher than Mont Blanc, and descends to Tiflis on the south. In the western part of the valley which separates the Caucasus and Armenia, the climate is said to be perfect, and the beauty of the scenery unsurpassed. It was here that the Argonauts sought the golden fleece. A railway crosses it from the busy ports of BATUM and POTI on the Black Sea, past TIFLIS (100, the name meaning *hot town*), the trade centre of the silk and wine-growing region of Georgia to BAKU, with dirty, flat-roofed, oil-stained houses near the Caspian. The whole neighbouring peninsula of Apsheron is riddled with petroleum wells and springs of naphtha and natural gas, where the fire-worshipping Persians had formerly temples. Tank-steamers laden with oil, and burning oil instead of coal in their furnaces, plunge and roll through the stormy waters of the Caspian to Astrakhan on the Volga, and a line of iron pipes is being laid to carry the valuable fluid in a continuous stream for shipment to Batum, 600 miles distant.

236. **Russian Central Asia** extends from the Caspian eastward, nominally broken by the "protected" states of *Bokhara* and *Khiva* on the Oxus. It is a region of deserts of baked clay or burning sand, hard to traverse at any time, but regularly crossed by caravans from China and India. The borders of the rivers are fertile; there are occasional oases, and in summer rich grass grows on the Pamir, 13,000 feet above the sea. The region is gradually drying up, the Oxus and Jaxartes, now called the Amu, and Syr-darya, are shrunk to a shadow of what they once were, and flow to the Aral Sea instead of uniting and sweeping round to the Caspian, as in the days of Strabo. In the north the people are mainly the fat, flat-featured, oblique-eyed Kirghiz, tending flocks and living in encampments of square black felt tents. They range over the vast flat steppes dotted with salt lakes, and the dune-ridged deserts for 1500 miles from the Volga to Lake Balkash. The Turkomans, living farther south, are a taller, handsomer people. Like the Tartars of history, they love war, and are happiest when sweeping over the desert on their fleet horses making a raid for cattle or slaves on their more settled neighbours. These free tribes acknow-

ledge no chiefs; they usually profess to be Mohammedans, but are really superstitious heathens. *Turkestan*, north of the Oxus, is now subject to Russia. It once formed part of the vast Saracen empire, with eastern Asia, northern Africa, and southern Europe; then for 200 years it was included in the Mongol empire, which in the thirteenth century, under Jenghiz Khan, stretched from Hungary to the Pacific. At that time many of its plains, now hopeless deserts, were watered by irrigation canals and covered with crops. Strict laws were observed, and regions no one now dares enter were crossed by thoroughfares free to all merchants. A regular service of steamers connects Baku with KRASNOVODSK on the south-east shore of the Caspian, whence a military railway crosses the desert with its occasional oases, where tigers lurk, for 800 miles to the east. MERV, at the end of the Murghab (just before that river, flowing strongly from the southern heights, dries up and disappears in the desert), is the first important station. The line crossing the Oxus on a bridge more than 2 miles long, reaches BOKHARA "the noble," a town full of mosques, on the Zarefshna (*Water of Gold*), another evaporating river, and terminates at SAMARCAND, once the "Asylum of peace and science" when the western world was in a chaos of war. Here is the tomb of Tamerlane, "the destroyer of the universe," who enslaved the Russians in his wars five centuries ago; but the Russians have now built a regular western city on the site of his old capital. TASHKEND (120), 150 miles to the north-east, on the well-watered mountain slopes beyond the deserts, is the most important as well as the largest town of Central Asia. The rich oasis around KHIVA, south of the Aral Sea, is watered by canals from the Oxus.

237. *Siberia*, or northern Asia, is peopled by a few of the least civilised tribes of the Yellow type, but the land is colonised in many places by convicts and political prisoners, who journey partly by rail and river, but mainly on foot, chained and guarded by soldiers, sometimes for 3000 miles from their homes. The dreary tundras, with their ever-frozen soil, thawing on the surface in summer to let mosses and lichens grow, give place southward to a zone of exuberant woodlands, where larch, pine,

and birch trees shelter innumerable fur-bearing animals; and these are succeeded by a border-land merging into the Kirghiz steppes, alive with marmots and other small burrowing creatures. In the south there are immense tracts of fine corn-growing land. The summers are hot everywhere, though the winters, in consequence of the clear dryness of the air, are terribly cold.



FIG. 8.—TARTAR RAID ON A FARM IN SOUTH-EASTERN SIBERIA.

Thousands of bodies of the **mammoth**, a huge hairy elephant, long since extinct, have been found frozen solid in the gravelly soil of the tundras; and the ivory of their tusks is an article of trade. Along the Urals, in the river-gravel of the plains, and particularly among the Altai Mountains of the south, there are rich mines of gold and all other metals.

**238. Towns of Siberia.**—The great Obi River and tributaries drain all western Siberia and form its chief highway,



having over 3000 miles of water navigable for steamers, and three times as much for barges. At **TUMEN**, the terminus of the railway from **Ekaterinburg**, travellers exchange the train for the *droshky* in summer, or *sledge* in winter, which brings them to **OMSK**, on the *Irtisch*, a stage on the dreary military road to the east; the fine old capital, **TOBOLSK**, farther north, being left on one side. At **TOMSK**, also on a tributary of the *Obi*, where gold is mined, a university has lately been founded. The **Yenisei**, far east of the *Obi*, has been entered by British trading steamers, which landed their cargo at **YENISEISK**, 1000 miles from the Arctic Sea. **Lake Baikal**, which is revered with superstitious fear by the fishermen, is the deepest and one of the most picturesque fresh-water basins in the world, and contains a peculiar species of *seal*, though the water is frozen 5 feet thick more than half the year. **IRKUTSK**, the capital of Eastern Siberia, and, thanks to Polish exiles, its most intellectual town, stands some distance to the west of the lake, while equidistant to the east is **KIAKHTA**, on the Chinese frontier, where the tea is purchased and sent off on its eighteen months' caravan journey to **Nijni Novgorod**. Farther east the great **Lena** rolls its unfrozen waters for a few months yearly past the little town of **YAKUTSK**, and expands to a breadth of over 4 miles before entering the Arctic Sea by a vast delta. The *Yakuts*, natives of this district, are only partially civilised, but they are such keen traders that it is hard for even a Chinaman or a Jew to cheat them. The coldness of this region, the coldest part of the world, is almost incredible; mercury remains frozen for weeks in winter; and at the little town of **VERKHOYANSK**, just within the arctic circle, the average temperature for January is 56° below zero Fahrenheit. **Kamchatka** peninsula has a fine summer climate which, although not ripening corn, brings up three crops of hay 5 feet high in the year; fish in the rivers and fur-bearing animals on the land are more numerous than anywhere else in Siberia. The most numerous native tribes here are the brave but dirty *Koriaks*, quite uncivilised and almost independent of Russian authority. The **Amur** (*i.e.* *Great River*), flowing into the Pacific, is being opened to commerce through the town of **NICOLAYEVSK** at its

mouth, and the fine lands bordering it settled by Russians. Although there are few trees, the rich herb-like plants make a regular jungle in some places, and the tangled thickets are haunted by tigers and bears. The most important town on the Pacific coast is VLADIVOSTOK (*i.e. Ruler of the East*), a fortified naval harbour, the terminus of an overland telegraph from Europe, and destined sometime to be a railway terminus as well.

• The cold foggy island of **Saghalien**, opposite which the Amur opens, is the most dreary of all the Russian possessions, and used as a place of exile for the worst criminals and most serious political offenders.



FIG. 9.—INDIAN OX-CART DRAWN BY A ZEBU OR HUMPED OX  
ELEPHANTS IN THE DISTANCE.

## CHAPTER XI

### SOUTHERN ASIA

#### PERSIA.

239. The **PERSIAN EMPIRE**, five times the area of the United Kingdom, now occupies the western half of the Iranian high plain, with an average elevation of more than 3500 feet above the sea. The **Persian Gulf** is the southern boundary, a line drawn from the **Shat-el-Arab**, along the edge of the Mesopotamian low plain and over the Armenian high plain to **Mount Ararat** in  $40^{\circ}$  N. and  $45^{\circ}$  E., marks off Turkey on the west. The frontier to Russia on the north is the **Araxes** River nearly to the **Caspian**, the south coast of that sea, and the **Atrek** River and margin of the Turanian low plain to **Sarakhs** in  $61^{\circ}$  E., whence an irregular line, determined by treaties, runs southward, marking off **Afghanistan** and **Beluchistan**, and terminating on the **Persian Gulf**.

**240. Climate and Crops.**—Except on the northern slope of the Elburz chain along the Caspian, the rainfall is very slight, the rivers are few and small, and the climate severe, the heat of summer being intensified by contrast with the cold of winter. Where the land, mainly in the western valleys, is irrigated by canals or tunnels from the mountains, it is very fertile, producing more wheat than the bad roads allow to be exported, melons and pistachio nuts in great perfection, fruit-trees of every kind, opium and tobacco.

**241. People and History.**—The Persians were an Aryan people worshipping the sun and fire as symbols of the good power in the universe according to the teaching of Zoroaster. They founded a great empire in ancient times, which overthrew Assyria, and established the unalterable “laws of the Medes and Persians” under Cyrus over all western Asia. Alexander the Great and his Greeks stopped the advance westward, and subdued the country. Later, Persia formed part of the dominions of the Semitic Arabs, and the people became Mohammedans in religion, as they still are, although of a different sect (*Shiites*) from the Turks (*Sunnites*). The Mongolian hordes next possessed the land, but on the death of the bloodthirsty Tamerlane native princes arose, and independent Persia became once more famous. During the present century Turkey and Russia have acquired large slices of the Empire, and the eastern part has been formed into the separate states, Afghanistan and Beluchistan.

**242. Government.**—The Emperor or *Shah*, who claims for himself such exalted titles as *King of Kings*, *Well of Science*, *Footpath of Heaven*, is an absolute monarch within his own country, restrained only by the precepts of the Koran; but in foreign policy he is powerless, his actions being dictated by the British and Russian governments.

**Education** is more respected and widely read than in any other Mohammedan country, but slavery is permitted. The slaves, however, are better off than the free peasants, who, besides their losses by periodical famines, are kept in the deepest poverty by heavy taxation. Well-to-do Persians of the towns are a handsome and cultivated people, shrewd, quick-witted, courteous, and

very poetical ; but wandering robber tribes of Kurds, Turkomans, and Arabs haunt the desert borders of the land. Native enterprise is progressing, although in 1888 there were only 5 miles of railway and about 200 miles of roads fit for carriages ; slow mule or camel caravans keeping up most of the internal traffic. There is a Persian telegraph system, and the British telegraph lines from India are carried across the country to join the European system in *Caucasia*. The navigable *Karun* River which flows into the *Shat-el-Arab*, has recently been opened to foreign trade.

**243. Towns of Persia.**—The mountain slopes and plains of *Mezanderan*, the district along the Caspian shore, are clothed with luxuriant semi-tropical vegetation flourishing in a climate that is never cold. *RESHT* is its chief town, built on a swainp which swarms with fish, and there are several harbours on the Caspian. Beyond the barren southern slopes of the *Elburz*, *TABRIZ* (160), in *Armenia*, has extensive trade with *Russia*. *Teheran* (210), the Shah's capital, is seven days' journey, though only 180 miles distant from *Resht*. The old town with its massive caravanseries, domed mosques, and mud-built houses in filthy streets, where wild dogs and jackals fight for the garbage, adjoins the new quarters with wide gaslighted boulevards, planted with trees, and lined with houses in European style. One of the two good roads in Persia leads south for 90 miles to *KASHAN*, centre of the weaving district, where the naturally artistic people slowly produce magnificent carpets and shawls in their own homes ; one shawl sometimes employs a family for a whole year. A ridge of low bare mountains running south-east from *Kashan* separates the narrow eastern valley (where *YEZD* stands on an oasis of mulberry trees crowded with silkworms), from the more fertile valley of *ISPAHAN*, the ancient capital, which encloses some grand ruins within its wall of 22 miles circumference. Farther south, amongst the broad bordering mountain ranges of *Parsistan*, the original nucleus of Persia, stand the desolate ruins of the once mighty *PERSEPOLIS*, and the shrunken village of *SHIRAZ*, where the nightingales still sing in the rose gardens as they did in the palmy days of *Hafiz* and *Sadi*, the two favourite Persian poets

who lie buried there. A bad road crossing six difficult passes leads down from Shiraz to BUSHIRE, the chief port on the Persian Gulf. The rocks along the eastern border of Mesopotamia are sculptured with pictures and records of the old Persian conquerors, and the still earlier Assyrians, preserved by the dry climate. The burning red sand desert of Lut in the south, and the wide salt wastes farther north, separate western Persia from the province of *Khorassan* in the north-east, where every village is a green islet in the brown desert sea. Little NISHAPUR, in a lovely valley, was once one of the greatest towns in the world. MESHED, farther east, is the holy city of the Shiite Mohammedans, as Mecca is of the Sunnites, but it is more interesting as the birth-place of Firdusi, the most graceful and best-known of Persian poets. SARAKHS, at the north-eastern corner of Persia, where the Heri-rud River emerges from the mountains, and begins to dry up on the desert, is a stronghold garrisoned by Persians under British influence against Russian advance on India.

#### BELUCHISTAN.

244. **BELUCHISTAN** spreads over the barren deserts and mountain chains of the east end of the Iran high plain between Persia and India, south of Afghanistan. Its coast of 500 miles has not a single harbour. The thin population belongs to a number of half-savage tribes, over whom the Khan of Kelat attempts to rule, his power being strengthened for this purpose by a British resident who dictates the Khan's foreign policy, so that the country is practically part of the Indian empire. The mountain rampart which rises up from the plain of the Indus is broken by the narrow Bolan Pass, through which a steep railway has been constructed to QUETTA on the northern boundary. Other passes farther south allow caravans from India to reach the capital, Kelat, a small town more than mile above sea-level, where snow lies for two months of the year.

#### AFGHANISTAN.

245. **AFGHANISTAN** is the gatekeeper of India, occupying the mountains and high plains which spread south-west-

ward from the Pamir, and including the rough passes used in all ages as the only land routes from the north of Eurasia to India. The northern frontier is the **Oxus**, but where that river emerges on the low plain of Russian Turkestan the boundary turns south-westward to the margin of Persia. On the north-east the frontier towards India runs along the crest of the **Hindu Kush** with its peaks of over 20,000 feet, and farther south along the eastern slope of the **Suleiman** (or Solomon) Mountains in the Indus Valley. The climate is like that of Persia, very extreme, on account of the height of the land, and because the regular winds blow alternately from hot Arabia in summer, and from the cold heights of Asia in winter. Only in the valleys is there soil suited for agriculture, but there the finest fruit-trees abound, producing apples, plums, apricots, and pomegranates, while castor-oil, *asafoetida*, and other medicinal plants are much cultivated.

**246. People.**—The **Afghans** or *Pathans*, who form about three-quarters of the people, claim to be descendants of Saul, King of Israel, and their handsome faces have a Jewish look, but their language shows them to be not Semitic but Aryan, and in religion they are Sunnite Mohammedans like the Turks. Many almost independent tribes, well able to defend their liberty under warlike chiefs, live in mountain villages, but all are nominally subject to the Emir or head ruler, who is pensioned and protected by the British Government, and jealously watched, lest he should ally himself with the Russians.

**247. Towns.**—Three great river systems—the Oxus, Indus, and Seistan—divide the country. In the north-east the streams, some of which dry up on the way, flow towards the **Oxus**. The ruins of **BALKH** (anciently *Bactria*), where Zoroaster preached, where the Greeks, and after them the Buddhists, had great seats of learning, now strew a circuit of 18 miles on the desert plains, south of the Oxus. **HERAT**, the *City of a hundred thousand gardens*, was long the chief town of Persian Khorassan, and had grown so vast in the thirteenth century that Jenghiz Khan slaughtered a million and a half inhabitants on capturing it. Such is the fertility of its soil, watered by canals from the sparkling *Heri-rud* (i.e. *River of Herat*), and so great is the

importance of its position on the best route from the northern plains to India, that the town, although fifty times destroyed by invaders, has been fifty times rebuilt. East of the Hindu Kush (*i.e. Hindu Killer*, because of the frequent deaths of Hindu merchants attempting to cross its snow-blocked passes), the rivers flow to the **Indus**. The principal pass over this range is the **Bamian**, at the northern entrance to which two huge images, 100 feet high, stand out from the neighbouring rocks, which have been honeycombed into thousands of galleries hewn by some ancient rock-dwellers. From **Kabul** (140), the capital and chief fortress, 6000 feet above the sea, a river of the same name plunges down deep defiles and foams along the **Khaiber Pass** to join the Indus. It is walled in by black cliffs rising perpendicularly for thousands of feet, and at some points only 40 feet apart. Through this pass Alexander the Great and countless other invaders poured down on India. British armies have marched up it to Kabul several times during the various Afghan wars. Through the **Sibi Valley** at the southern frontier a British railway has been carried from India, joining the Bolan Pass line at Quetta on the frontier of Beluchistan, and extending westward to Pishin in 1888, when a tunnel 4 miles long was being bored through the **Khojak Amram Hills** on the way to the strong square city of **KANDAHAR**. This town stands on the caravan route to Persia, near the head of the **Halmand River** (*i.e. embanked river*, from the numerous irrigation works it supplies), which flows south-westward to the salt **Seistan** swamp, usually a dry desert basin, at the meeting-place of the three Iran states—Persia, Afghanistan, and Beluchistan. The word *stan*, so common in the names of this part of the world, means *country*.

#### THE INDIAN EMPIRE.

**248.** The **INDIAN EMPIRE** is more than twelve times the size of the United Kingdom. The population of over 250,000,000 is made up of an immense number of races speaking hundreds of different languages, and different also in religion, culture, and modes of government. The Indian peninsula com-



prises three distinct regions : (1) The steep *Southern Slope of the Himalayas* in the north ; (2) the *Great Plain* at the foot of the mountains, scarcely more than 600 feet above the sea in any part, and traversed by great rivers ; (3) the *Dekkan*, a triangular high plain worn into river valleys and hills, in the south. The Empire stretches round the Bay of Bengal, and occupies the west side of the Indo-Chinese peninsula.

**249. Surface.**—The great navigable rivers are the **Indus**, **Ganges**, and **Brahmaputra**, with their tributaries in the Great Plain, the **Irawadi** and **Salween** in *Burma*. The streams of the Dekkan are too steep and swift for steamer traffic. Just south of the **Vindhya Hills**, which form the northern boundary chain of the Dekkan, the **Narbada** River flows westward to the Gulf of Cambay. The **Satpuri Hills** separate its valley from that of the **Tapti**, which enters the sea farther south. South of this the line of the **Western Ghats** (called *Ghats*, i.e. landing-stairs, on account of their steep, terraced aspect from the sea) is broken only by mountain torrents. Several streams rise on the eastern slopes and form deep valleys, which widen towards the Bay of Bengal, and cut the western border of the high plain into the low irregular line of the **Eastern Ghats**. The largest of these rivers is the **Kistna**, which enters the Bay of Bengal in lat. 16° N. The **Godaveri**, flowing from the north, enters the sea near the mouth of the **Kistna**. The **Mahanadi**, which runs east, forms a large delta just south of that of the **Ganges**. **Railways**, almost unknown elsewhere in Asia, extend to a length of 16,000 miles, and they form a long network along the Plain from Calcutta to the passes of Afghanistan, while narrow-gauge lines branch out to north and south. Most of the river valleys of the Dekkan are also traversed by the iron ways which are carried by long zigzags down the wall-like front of the western Ghats (compare § 316, Fig. 15).

**250. The climate of India** depends on the configuration. In consequence of its low latitude, the low-lying land is everywhere hot, but a mile or more above sea-level, on the Dekkan and the sides of the Himalayas, a delightful climate like that of southern Europe prevails all the year round. The rainfall

is regulated entirely by the monsoon winds. From April to September the steady **south-west monsoon** blows from the Indian Ocean landward, and rain dashes in incessant showers on the seaward slope and summits of the western Ghats, whence, blowing over the Dekkan free of vapour, it gives no rain in the centre, or on the eastern Ghats. But the same monsoon blowing over the Bay of Bengal takes up more moisture and deposits it all along the hills of the eastern coast of the bay, and an eddy caused by the great Himalayan Mountain wall turns the wind to a south-east direction, carrying its fertilising showers right up the plain of the Ganges. The region where rainfall is least at all seasons is in the Tharr desert of the *Punjab*, which lies too low to condense the vapour from the wind blowing over it. From October to April the **north-east monsoon** blows cold and dry from Asia, gathering moisture in crossing the Bay of Bengal, and depositing it on the eastern Ghats. Great storms occur twice a year at the change of the monsoons. At somewhat irregular intervals of about eleven years the monsoon rainfall fails, there is no harvest, and dreadful **famines** have always been experienced in consequence. These famines are now much alleviated by Government erecting or repairing thousands of storage tanks throughout the Dekkan, and digging irrigation canals on a vast scale on the Plain and the deltas, which let the water, literally the life of the land, circulate through the fields.

**251. The mineral productions** are of far less importance than the agricultural. Most of the coal for railway use is brought from England, but about a million tons of inferior quality are raised in the north-eastern slope of the Dekkan. Great **rock-salt** deposits are worked in the Salt Range in the north of the *Punjab*, but salt is a Government monopoly, and is highly taxed. **Petroleum** and **precious stones** are abundant in *Burma*.

**252. Vegetable Productions.**—Great forests of magnificent timber cover all the well-watered hill-slopes, but most of the land of the Empire is cultivated, yielding immense crops of various kinds of **millet** (*durrah*), the chief food grain of the

people, **rice**, on which millions live in the swampy lowlands, and **wheat** in the dry warm plains of the *Punjab*. **Cotton** on the west, and **jute** in the north-east are the chief fibre plants. **Tobacco**, **tea**, the **opium** poppy, the sugar-palm, **indigo**, and innumerable other kinds of plant produce are raised in various places.

**253. Animals.**—The wild animals of India include the **elephant**, especially in the north, the **rhinoceros** in the river deltas, and the **wild boar**, which is hardly less dreaded than the terrible **royal tiger**. There are smaller flesh-eating and plant-eating animals innumerable. **Monkeys**, being held sacred, are never killed in India by the Hindus, and swarm in the woods, the villages, and even in the temples. More than 20,000 people are killed every year by wild beasts and **serpents**; but a reward is paid by Government for every dangerous animal destroyed, and the number is steadily decreasing. There are few horses used in India, **oxen** of various kinds are the chief beasts of burden, and are employed even in carriages and for riding, while the sagacious elephant is an ornament of state processions, and useful for many kinds of heavy work.

**254. History.**—In ancient times the great Indian plain was occupied by people of the Black type in two great varieties, the **Kolarian** and **Dravidian**; but before the dawn of history **Aryan** hosts marched through the Khaiber Pass and possessed themselves of the good land, driving back the weaker tribes to the Himalaya slopes on the north, and the rugged high plain of the Dekkan on the south. These early Aryans worshipped the powers of nature as manifestations of God; their religion, **Brahmanism**, and their **Vedas** or sacred songs, are still revered by nearly 200,000,000 of Hindus. The **Buddhist** philosophy originated in India, but the more ancient **Brahmanical** form of worship revived, and the Buddhists were driven north over the Himalayas, and south to the islands of the Indian Ocean.

Alexander the Great, though he conquered part of India, did not found an empire. The Persian Mohammedans, ages later, had a more powerful influence, introducing their religion early in the Middle Ages. The descendants of Tamerlane, also coming

through the Khaiber Pass, finally founded the Mohammedan Mongol or **Mogul empire** over the whole peninsula in the sixteenth century. Portuguese settlements had already been made on the west coast, and in the seventeenth century English adventurers formed the **East India Company**, and gradually increased the number of their *factories*, as the fortified trading stations were called. The gorgeous but tyrannical Mogul empire was demolished by the **Mahrattas**, a powerful native people of the north-west, and these in turn were subjugated by Clive and other officers of the East India Company. A long struggle with the French for supremacy in India was decided in favour of the British in the middle of the eighteenth century, and from that time the Company ruled most of the country, either directly or through residents at the courts of native princes. The peninsula was then divided into the three presidencies of *Bengal* in the north, *Bombay* on the west, and *Madras* on the east. The native soldiers or *sepoys*, who formed a large part of the British army in India, broke out in rebellion in 1857, and when the mutiny was quelled the Company was superseded altogether, and India became once more an **empire** under Queen Victoria, who assumed the title of *Kaiser-i-hind*, or Empress of India, in 1876.

**255. People.**—The **Hindus** (named from the Indus River), living chiefly in the Plain, are extremely intelligent, the lower classes gentle and servile, the higher learned and philosophical. They are Brahmanists in religion, and rigidly divided into castes, the members of each of which have special professions or trades allotted to them. The **Parsees**, or Persian fire-worshippers of Bombay, are sharp men of business and accomplished traders. Of the **Dravidian** tribes some are exclusively warriors, others farmers and shepherds, and most of the **Kolarians** are simply wandering savages.

**256. Government.**—The Empire has been steadily extended to include the land of troublesome border tribes, or to secure possession of important passes, and now it includes the whole peninsula, the southern slope of the Himalayas, and a broad strip of the eastern shore of the Bay of Bengal to the borders of China and Siam. The whole empire is ruled by the

Governor-General or *Viceroy*, who is instructed by the Secretary of State for India in the British Government. The Viceroy governs several small divisions of the Empire directly; but each of the eight chief provinces is presided over by an officer with large powers, and subdivided into numerous divisions and districts. In addition to these there are several hundred native states of all sizes. Some of these are only a little more controlled than Afghanistan, Bhutan, and Nepal, which are not formally included in the Empire, but others are allowed a very small degree of freedom.

#### CHIEF PROVINCES UNDER DIRECT BRITISH RULE.

Province.	Title of Officer.	Area, square miles.	Population in 1881.
Burma . . .	Chief Commissioner	277,000	7,000,000
Bengal . . .	Lieutenant-Governor	156,000	67,000,000*
Madras . . .	Governor . . .	140,000	31,000,000
Bombay . . .	" . . .	124,000	16,000,000
Punjab . . .	Lieutenant-Governor	107,000	19,000,000
N.W. Provinces and Oudh . . .	" . . .	106,000	44,000,000
Central Provinces .	Chief Commissioner	84,000	10,000,000
Assam . . .	" . . .	46,000	5,000,000

#### CHIEF NATIVE STATES OF INDIAN EMPIRE.

Haiderabad . . .	Nizam . . .	82,000	10,000,000
Mysore . . .	Rajah . . .	25,000	4,000,000
Baroda . . .	Gaekwar . . .	8,000	2,000,000
20 States of Rajputana .	Agency . . .	130,000	10,000,000
82 States of Central India . . .	" . . .	75,000	9,000,000
70 Other Native States .	" . . .	189,000	19,000,000

#### 257. States and Towns of the Himalayan Region.—

The base of the Himalayas is everywhere fringed with a hot, marshy, fever-haunted tract of luxuriant jungle called the **Terai**; but above it the slopes have a mild and healthy climate. The state of **KASHMIR**, most of it more than 2 miles above the sea, where the Karakorum and Himalayas meet, separates Afghanistan from Tibet. From **LEH**, the ancient capital of the maharajahs (*i.e. great kings*), caravans start for Tibet. The **Vale of Kashmir**, down which the **Jhelam** River flows swiftly and softly on its way to the Indus, is a paradise of loveliness, delightful both in scenery and climate. Here the chief industries are

the weaving of **shawls** from the soft hair of the mountain goats, farming, and rose-distilling. The city of **SRINAGAR**, its earthen house-roofs ablaze with flowers, is the centre of this fertile region ; and land is so valuable that gardens are made on rafts anchored in the shallow lakes. **SIMLA**, a modern town, runs along a ledge of the mountains at a height of 7000 feet above the sea, south of the border of Kashmir. It is nearly a thousand miles from Calcutta, but the Viceroy, with his court and all their followers, travel there by rail and road every summer, and make it the capital of the Empire during the hot months.

Farther east the states of **NEPAL** and **BHUTAN** run along the southern slope of the range ; the reigning rajahs (*i.e.* *kings*), although watched by British residents, allow no other European to enter their land. *Sikkim*, between them, is under direct British rule. The poisonous Terai lies below all those states, and the steep snowy passes to Tibet (the most important of which is the **Jalapla** in *Sikkim*) rise above them. Rough paths along the sides of terrible gorges (see Fig. 1, § 87), sometimes merely a row of narrow steps driven into the face of a precipice, enable the brave Nepalese to climb from one village to another ; but even their sure-footed goats and pack-sheep (their one beast of burden) cannot always follow them. The rivers are crossed by rough **suspension bridges**, often hundreds of feet above the water, formed of a single strong rope, along which the passenger hauls himself in a basket. In *Nepal*, **Mount Everest**, called by the Tibetans *Gaurisankar*, or “the radiant,” raises its grand snowy summits a mile higher than the boldest mountaineer has ever climbed. In all these Himalayan states the prevailing religion is **Buddhism**, and Buddhist monks are numerous.

#### 258. Towns of the Eastern Division of the Great Plain.

—The low flat Plain is covered with wide rivers and canals, crowded with commerce ; and railways string together the many large cities. Every square foot of soil is diligently cultivated in some districts by a population three times denser than that of Belgium, and everything contrasts strongly with the rough mountain slopes.

DELHI (170), the old capital of the Moguls, a gorgeous city of temples and monuments, stands on the Jumna, near the summit of the gentle swell of land between the Ganges and the Indus valleys. Farther down this river is AGRA (160) with the marble **Taj Mahal**, built by Shah Jehan in memory of his favourite wife, the most exquisite structure of the kind in the world. ALLAHABAD (150), at the junction of the Jumna with the Ganges, has grown to b. the centre of the northern railway system.

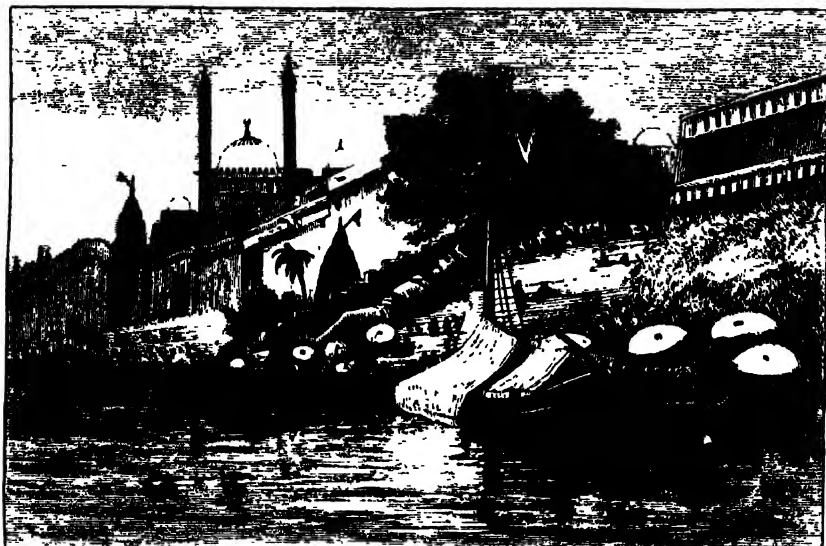


FIG. 10.—A BATHING GHAT AT BENARES, ON THE GANGES.

The rock fortress of GWALIOR (200), south of Agra, on the edge of the Dekkan, is one of the strongest in India. Midway by rail between Agra and Allahabad, the manufacturing town of CAWNPORE (150) stands on the Ganges, where Nana Sahib committed the worst atrocities of the mutiny. A little north of it stands LUCKNOW (260), once the capital of the rajahs of *Oudh*, and famous for the gallant defence of its garrison in the mutiny, and the heroic relief expedition of Havelock. Below Allahabad the Ganges, which is held as a sacred stream by the Hindus, rolls its wide waters past the holy city of BENARES

(200), where marble ghats, or landing-stairs, always crowded with pilgrims, ascend in flights for 100 feet from the water to the glittering, but filthy temples of the town (see Fig. 10).

All these great cities are in the *North-West Provinces*, from which the Ganges flows through the purely agricultural province of *Bengal*, a land of small villages half hidden in palm trees. PATNA (170), with large government opium-factories, is the only large town except Calcutta (with suburbs 870), 80 miles from the sea, on the rapid Hugli, a branch of the Ganges. The largest city of the British empire next to London, Calcutta has been the capital of India since the great battle of Plassey in 1757. Like most large Indian towns, it is divided into two parts: *White Town*, containing the palaces and parks of the wealthy British inhabitants; and *Black Town*, crowded with the mud-houses of native labourers. Far to the east, the uninhabitable delta region or *sanderbans*, half land, half sea, is covered with dense jungle, the undisputed home of the rhinoceros and tiger. The valley of *Assam*, down which the impetuous Brahmaputra dashes in changing channels, has the most luxuriant vegetation on account of the heavy rains brought by the south-west monsoons. Here the tea-tree has its natural home, and tea plantations employ most of the working people.

**259. Towns of the Western Division of the Great Plain.**—The Indus valley, including the wheat-growing *Punjab*, i.e. "Land of five rivers" (Indus, Jhelam, Chenab, Ravi, and Sutlej), contains in the north the rich industrial town of AMRITSAR (150); and LAHORE (150), capital of the learned and warlike Sikhs. These towns are railway junctions to PESHAWER and the Khaiber Pass. A railway runs down the Indus bringing wheat to the modern seaport of KARACHI (*Kurrachee*). The *Rann of Katch*, or seaward end of the great *Tharr Desert*, is a flat plain sometimes flooded for hundreds of square miles with water 3 feet deep, through which camel caravans wade, while everything around is distorted by continual mirage. East of the desert a railway line from Agra through the *Rajputana* native states, passes JEYPORE (140), the old capital of the free and chivalrous Rajputs, AHMEDABAD (130), a manufac-



turing town, and BARODA (100), the residence of one of the wealthiest native princes. The line crosses the Narbada, and then the Tapti at SURAT (110), which is strongly embanked to escape floods, and terminates at Bombay.

**260. Towns of the Dekkan Region.**—**BOMBAY** (770) stands on a narrow peninsula enclosing a bay, which forms the only good natural harbour in India. It is a purely mercantile town full of **steam cotton-mills**, manufacturing the cotton grown on the black soil of the Tapti valley and neighbourhood. On the island of Elephanta, in the harbour, there are wonderful rock-hewn temples with huge repulsive figures of the Brahmanical gods. The distance to Calcutta by the **railway** up the Narbada valley, past JUBBULPORE, and *via* Allahabad, is 1100 miles, but a more direct line is being made farther south, with NAGPORE (100) as one of its chief stations. A line from Bombay through the great pass of the *Bhor Ghat* crosses the Dekkan south-eastward past POONA (130), where there are rock temples, to Madras on the east coast. A branch goes to HAIDERABAD (350), the capital of the largest native state, close to the ancient rock-perched fort of GOLCONDA, where the diamonds that were gathered in the surrounding clay plains used to be collected. MADRAS (400), with an artificial harbour on the surf-beaten coast, is the chief town and railway<sup>c</sup> centre of southern India. Lines passing southward traverse the little French colony of **PONDICHERY** to most of the towns of the south coast, and branch inland to BANGALORE (160), the largest town of the native state of *Mysore*, where gold is mined. The **Nilgiri Hills**, at the junction of the eastern and western Ghats, contain many favourite summer resorts, chief amongst which is **UTAKAMUND**, a railway terminus. At COCHIN; on the south-west coast, Vasco da Gama, the first voyager from Europe, died, and at this village also the first European Christian church was built, and the first book printed in India. The small Portuguese colony of **GOA** lies farther north on the west coast.

**261.** The **Laccadives** (*i.e.* *hundred thousand isles*), the **Maldives** (*i.e.* *thousand isles*), and the **Chagos Archipelago** are groups of coral islands, some of them perfect atolls. They

crown a chain of submarine banks which stretch southward from 12° N. to 8° S. They are all peopled; and Diego Garcia, a large atoll in the Chagos group, is an important coaling station.

**262. Towns of Farther India.**—*Burma*, the largest province in the Empire, stretches from *Assam*, along the east coast of the Bay of Bengal, as far south as 10° N. It is bounded on the east by the unsurveyed mountainous territory bordering China, and peopled by the brave and independent *Shan* tribes. The native **Burmese** are almost all Buddhists, and resemble the Chinese in feature and character. The great river Irawadi is the chief commercial highway. On the rice-growing lands of the delta stands the busy port of RANGOON (130), with great foreign trade and very extensive fisheries; 400 miles inland by rail stands MANDALAY on the same river, a square walled town full of fine Buddhist monasteries, and formerly the capital of the bloodthirsty King Theebaw. The head of navigation is BHAMO, 700 miles from the sea, near valuable mines of ruby and jade, and with much land trade by mule caravans to China. MOULMEIN, at the mouth of the Salween, the frontier river towards Siam, exports teak wood.

#### CEYLON.

**263. CEYLON**, i.e. *the isle of lions*, although no lions are found there, was formerly called *Taprobane*, from a Hindu word meaning copper-coloured, in allusion to the red soil of the island. In early times Ceylon was very densely peopled; but the old **Singhalese**, of Dravidian origin, were nearly exterminated in the wars of the Middle Ages. In the beginning of the sixteenth century Portuguese settlers formed trading stations on the island, but the Dutch captured it 100 years later, and lost it to the British in the end of the eighteenth century. It is now a Crown colony, ruled by a governor appointed by the Colonial Secretary of the British Government.

This pear-shaped island rises in a very gradual slope from the north and more steeply from the other sides to **Adam's Peak**, the grand central mountain. The shallow water of the **Gulf of Manaar**, in the north, swarms with shellfish, including

the valuable **pearl-oyster**. Precious stones of many kinds are abundant in the rocks and river-gravel, and there are valuable deposits of **graphite**, the "black lead" of which pencils are made. All round the shore graceful **cocoa-nut palms** lean towards the sea with their burden of fruit, and the forests clothing most of the island are fragrant with **nutmeg**, **cinnamon**, and other spices, and waving with the tall slender shafts of **bamboos**.

Planting is the chief industry of the island, and **coffee** on the high ground was formerly the great source of wealth, but a disease has recently spoilt the crop, and **tea** is now being largely grown instead. The **cinchona** tree, from which quinine is extracted, has also been introduced.

**264. Towns.**—The island is full of vast ruined cities which were once strongly fortified and adorned with splendid temples. **Colombo** (100), the capital on the west coast, is the chief modern town, and is a calling station for Australian mail-steamers. **GALLE**, at the south of the island, was previously the mail station. A railway from the capital leads inland, climbing up the slope through palm groves and tea-plantations to **KANDY**, which boasts of one of the finest Botanic Gardens in the world at **PERADENIA**. **TRINCOMALI**, with a fine harbour, on the north-east coast, is a station of the British fleet.

## SIAM.

**265. Area and Surface.**—**SIAM** is a name unknown to the natives, who call their country *Muang Thai*, "the Kingdom of the Free." Its present area is about twice that of the United Kingdom, but its boundaries are not quite fixed. It occupies the north-east of the **Malay Peninsula**, touches Burma on the west, the partially independent *Shan States* or China to the north, and the French possessions to the east and south. Most of the land is mountainous, the ranges running from north to south, enclosing the wide plains of the **Menam River**, and the narrow tortuous middle valley of the mighty **Mekong**, which flows close to the eastern frontier. The country is as a whole

well watered and fertile—rice, teak, bamboos, and rattan canes being largely exported. Elephants and other wild animals are common, and white varieties of every creature are considered specially sacred, a white elephant being a coveted possession of the King, and no one else would dare to own one.

**266. People.**—The people belong to many tribes, they are mainly **Buddhists** in religion, and the name *Indo-Chinese* not only tells their geographical position, but also the fact that their civilisation and customs are midway between those of India and of China. They are gentle, persevering, and very polite; but a great many Chinese settlers fill the large towns and take most of the trade. The King of Siam calls himself *Master of Life*, and rules despotically; amongst other exactions every man must spend three months of the year in forced labour for the State, either at his own trade or as a soldier. European customs are, however, gradually creeping in.

**267. Towns.**—**ZIMMÉ** (300), in the north-west, is a stopping-place on one route from Burma to China, but the capital **Bangkok** (500), on the Menam, near its mouth, is almost the only town doing direct foreign trade. Grandly carved and gilded pyramidal **pagodas** or Buddhist temples shoot up from the houses, trees, and shipping which form the town. It is intersected by canals, and street after street is composed of houses built on boats moored in the river itself.

#### FRENCH INDO-CHINA.

**268.** The French have gradually possessed themselves of the whole coast to the south and east of Siam, comprising (1) **CAMBODIA**, with a great lake 100 miles long, swarming with fish, and bordered by ruins of magnificent cities and temples; (2) **COCHIN CHINA**, on the delta of the Mekong, divided up by dykes or sea-walls on a much larger scale than those of Holland; (3) the old despotic empire of **ANNAM** in the east; and (4) the province of **TONKIN**, occupying the first incurve of the east coast of Asia and bordering China. **PNOM-PENH**, the former capital of Cambodia, on the western branch of the

Mekong, has constant trade with **Saigon**, at the east end of the delta, the strongly-fortified and commercial capital of the French possessions. **HUÉ**, a former stronghold of the Annamese despots, is a stage on the great north highway from Saigon. **HANOI**, in the province of Tonkin, where this road ends, is a far grander city, the streets paved with marble, and protected by a still stronger fortress. The productions of French Indo-China are mainly from the forest and the field—**teak** and **rice** being most important; there are also great mineral deposits which will soon be opened up, as **railways** are being made; but the land can never rival India in commercial or political importance.

#### MALAY STATES.

**269.** The southern end of the Malay peninsula, perhaps the most exuberantly fruitful region in the world, is mainly peopled by the **Malay** race, although Chinese immigrants threaten to outnumber them. **Tin** mines worked by Chinamen occur all round the peninsula, forest produce of many kinds, including **camphor**, **sago** (the pith of a large tree), **gutta-percha**, **rattan** canes, and **pepper** are diligently collected. The Strait of Malacca, between the peninsula and Sumatra, is lined by a chain of British Crown colonies called the **STRAITS SETTLEMENTS**. The principal settlements are the island of *Penang* (a peculiar walking-stick cut here is called the Penang lawyer), *Province Wellesley* opposite it, *Dindings*, *Malacca*, and the island of *Singapore* at the southern extremity. The rajahs of most of the little native states, such as *Pahang* and *Perak*, are under British protection, and a police of Indian sepoy keeps the whole nondescript population in order. **SINGAPORE** (100), *i.e.* *Lion City*, most favourably situated between India and China, is the greatest trade town of the far east. Its great docks are always crowded with shipping, and it is one of the few ports where there is no custom-house, and goods of any kind can be landed or shipped free of duty. Wild **pigs** still devastate the plantations on the island, but the tigers which once used to kill 300 people every year have been exterminated.

## THE EASTERN ARCHIPELAGO.

**270. Plants and Animals.**—The islands of this great group have already been described physically (§ 85). The north-western islands have the same dense forests and dangerous wild beasts as the Malay peninsula, while the plants and animals of the south-eastern part closely resemble those of Australia. The narrow but deep Lombok Passage sharply separates Asiatic apes in the little island of *Bali* from Australian opossums in *Lombok*; and Macassar Strait similarly divides the Asiatic animals and plants of *Borneo* and the *Philippines* from the Australian forms of *Celebes* and the southern islands. But almost every island possesses some forms peculiar to itself, and by the nature and habits of these creatures naturalists have been led to suppose that once a continent or close chain of islands, long since vanished, ran across the Indian Ocean to Madagascar, where similar animals are found. The climate throughout is hot, and the rainfall great, but the steady monsoon winds and the elevation of much of the land make many of the islands remarkably pleasant.

**271. Government.**—The native races have little power in the archipelago. Most of the islands belong to the Dutch, from whom they were captured by the British at the end of last century, but restored at the great European rearrangement of 1815. The Dutch govern their vast possessions (about sixty times the size of the mother country) much in the same way as the British govern India, making use of native subordinates under European superiors.

**272.** The large island of **SUMATRA**, 1000 miles long, with *Banka* and *Billiton* off the east coast, is Dutch except for the small native state of **ACHIN** in the north. **PADANG**, on the west coast, is the most important town. Next to it comes **PALEMBANG**, 50 miles from the mouth of the Musi on the east coast, the river being navigable by bamboo rafts for 200 miles farther into the interior. Forest produce, especially the fragrant **camphor**, and **gum-benzoin**, and cultivated **pepper** and **coffee**, are exported.

**273. Krakatoa.**—In Sunda Strait, between Sumatra and Java, *Krakatoa*, an islet consisting of one volcano, was shattered by the greatest volcanic explosion ever known in August 1883, and the dust of it was blown through the air all round the world, giving rise everywhere to sunsets of great beauty for several months.



FIG. 11.—A SCENE IN JAVA, SHOWING A RIVER VALLEY, PALM-TREES, AND ACTIVE VOLCANO.

**274. JAVA**, crowded with volcanoes, which rise above the most gorgeous tropical forests, alive with brilliant birds and insects, is the wealthiest of the Dutch East Indies. An old crater, named the *Guevo Upas* or Poison Vale, in one of the forests, exhales carbonic acid gas, and the margin is strewn with skeletons and corpses of beasts and men that went too near the deadly hollow. Most of the hot low-lying land is laid out

in plantations of **sugar-cane** and **cocoa-nut palm**; the cooler mountain slopes bear **coffee** shrubs and **cinchona** trees, and **tea** plantations have recently been opened. The gentle and intelligent people profess to be Mohammedans, but their religion is modified by the older Brahmanical and Buddhist superstitions brought by ancient emigrants from India, whose temples still crown many of the heights. **Batavia** (500), in the north-west, a magnificent town, half European, half native, is the capital and chief commercial town of the whole Dutch possessions. **SURABAYA**, in the north-east at the mouth of a long navigable river, has a good harbour enclosed by the island of *Madura*. Midway between these towns **SAMARANG**, also on a river of the north coast, is joined by one of the numerous railways with the native capitals of **SURAKARTA** and **JOKJOKARTA**, whose "emperors," although politically powerless, live in luxurious magnificence.

275. **Borneo**, though only partially explored, is known to contain no active volcanoes; but vast deposits of good **coal** occur, and **gold** and **diamonds** have been worked for ages. Rivers navigable for hundreds of miles through **rice-fields** and tangled forests, where the long-armed orang-utan swings from tree to tree, flow outwards from the long radiating mountain ranges of the interior. Half the natives are **Malays**, half are wild **Dyaks**, who were formerly dreaded pirates. The **Dyaks** make raids on their neighbours, and kill strangers for no other reason than to possess their heads, for the more dried human heads a **Dyak** has hanging in his house the more highly is he thought of. Most of this vast island, nearly four times the size of Britain, is claimed by the Dutch, who have many small trading towns. The north-west coast is occupied by **SARAWAK**, formerly an independent country, but now under British protection. An Englishman is its rajah, governing in his capital of **KÜCHING** with the advice of a council of native chiefs. North of this is the little despotic Malay monarchy of **BRUNEI**, whence the English name of the island was derived. The northern extremity is governed by the *British North Borneo Company* as a commercial speculation. Besides ordinary forest produce, a



particularly valuable kind of **camphor**, and the edible **nests** of a species of swallow used for making soup, are largely exported to China.

276. The highly volcanic group of the **PHILIPPINE ISLANDS** (belonging to Spain) contains exquisite mountain lakes set in a richer frame of tropical forest than covers any other island of the archipelago. Most of the inhabitants have become Roman Catholics, but in *Palawan* and the *Sulu* group, stretching towards Borneo, the Malay natives are Mohammedan or heathen. The great island of *Mindanao* in the south is separated by a maze of islets from the still larger *Luzon* in the north, where *Manila* (270), the capital, stands on the west coast. It exports sugar, **tobacco**, coffee, and especially the glistening **hemp**, which grows in great perfection on this island. •

277. Starfish-shaped **Celebes**, with its four mountainous peninsulas terminating in little island groups, has the finest climate, although on the equator, but is subject to volcanic eruptions and earthquakes. Cultivated crops and forest produce are the chief resources, one tree yielding the famous **Macassar oil**. The two semi-civilised races of the south, the *Bugis* and *Mangkassars*, manufacture a coarse cotton cloth, and trade largely in native vessels with other islands. The chief town of the Dutch, who possess the island, is **MANGKASSAR** (or *Macassar*), in the south-west.

278. The **MOLUCCAS** or *Spice Islands*, all belonging to Holland, have *Jilolo* and *Ceram* as their largest members. They are singular for the size and beauty of their beetles, and still more for their long-tailed birds of **Paradise**, and their fragrant **spices**. The cultivation of nutmegs and cloves was long confined by the Dutch to the lovely *Banda Islands*, all the trees in other places being carefully sought out and destroyed. **AMBOYNA**, on the island of the same name, is the chief town and centre of the clove trade.

**Timor**, the most southerly island of the Eastern archipelago, belongs to the Dutch in its southern half, the Portuguese retain the northern end as the last relic of their once great Eastern possessions.

**279. New Guinea.**—*Papua* (from a Malay word meaning “frizzled,” from the elaborate way in which the savage natives frizz out their hair) was called *New Guinea*, as its hot unhealthy marshes reminded early voyagers of the pestilential west coast of Africa. This vast island is one of the least known parts of the world. The interior is mountainous, some peaks being supposed to rise above the snow-line to 16,000 or 18,000 feet, but the heat and unhealthiness of the climate and the treachery of the natives have hitherto prevented explorers from reaching the heights. The **Fly River**, opening on a wide delta in Papua Gulf to the south-east, is probably the largest, as a traveller ascended it for 500 miles in a steam launch, but others which are less known are also of great size. The natives, although heathen and even cannibals, are very artistic, adorning their nest-like houses perched in the trees and their long graceful canoes with carvings of great beauty, usually in the form of birds. The western half of the island (west of 141° E.) is claimed by the Dutch, the north-eastern quarter and the *Bismarck Archipelago* (formerly known as *New Britain* and *New Ireland*) by the Germans, while the south-eastern portion, separated by Torres Strait from Australia, is a British Crown colony, with its capital at the village of **PORT MORESBY**.



FIG. 12.—CHINA'S SORROW. THE YELLOW RIVER IN FLOOD.

## CHAPTER XII

### EASTERN ASIA

#### THE CHINESE EMPIRE.

**280. Extent and History.**—The centre and east of Asia are occupied by the ancient Chinese empire, which was old before Greece was founded. Extending from Russian Siberia on the north, to French Cochin China, Siam, and India on the south, its area in one continuous mass that of the Russian empire, or 34 times the size of the United Kingdom, and its population comprises more than one-quarter of the human race. It was formerly bounded to the north by the Great Wall of China, a broad earthen rampart protected by towers and faced with stone or brick, stretching for more than 1500 miles inland over hills and rivers, from the Gulf of Pe-chi-li. This wall was built by the peaceful and industrious Chinese 2000 years ago to protect their land from the warlike Manchu or Tartar tribes.

Jenghis Khan, the Mongol Emperor, conquered China before carrying his armies westward, and in the reign of his successor, Kublai Khan, in the thirteenth century, Marco Polo, a Venetian, visited the country, and first made its wonders known to Europe. This mediæval explorer is actually still the most recent European traveller in some parts of the Empire whence strangers are now jealously excluded.

**281. Government.**—The Emperor, of pure Manchu descent but perfectly Chinese in language and religion, is an absolute ruler, although very ancient laws, which are interpreted by a special board of learned men, the Censors, are binding on him. Each of the provinces is under a governor or viceroy, who has the power of life and death over its inhabitants. All government offices are filled by the Mandarins, members of a learned class, who are selected by competitive examinations in the old Chinese classics. These examinations are open to all comers, however humble their birth. The rank of the Mandarin is shown by the size and colour of the button on his cap.

The spoken **language** differs in various parts of the Empire, but writing is the same in all, as each character or *ideograph* represents, not a sound or word—as with us—but an idea. In the same way the figures 1, 2, 3 are ideographs, for they represent ideas understood by all Europeans, although the words *one, two, three* have a meaning only to those who speak English.

#### THE CHINESE EMPIRE.

Division.	Area, square miles.	Population.	Density per sq. mile.
China Proper . . .	1,300,000	383,000,000	295
Manchuria . . .	300,000	12,000,000	33
Mongolia . . .	1,290,000	2,000,000	1.5
Tibet . . .	650,000	6,000,000	9
Jungaria . . .	150,000	600,000	4
Eastern Turkestan . .	430,000	600,000	1.5

**282. Surface of China Proper.**—The “Middle Kingdom” or “the eighteen provinces,” as it is officially called, occupies the central East Asian outcurve from the Gulf of Tonkin to the Yellow Sea (20°-40° N.), opposite North America, from the middle of Mexico to San Francisco. It is traversed by two

great rivers, rising close together in Tibet, diverging widely as they flow eastward, but approaching again towards the sea. The greater, the **Yang-tse-Kiang** or *Blue River*, completes its wide southward curve in the wild gorges bordering Tibet, and flowing to the Yellow Sea nearly along the parallel of 30° divides the country into two nearly equal parts. To the south there are close-packed ranges of low mountains, the main ridge separating the Yang-tse basin from that of the smaller **Tsi-Kiang** to the south where the soil is poor, but is diligently cultivated. To the north the vast flat plain covered with the yellow earth extends to the **Hoang-Ho** or *Yellow River*, which, after a northward sweep beyond the Great Wall, flows south through mountain gorges for nearly 400 miles, then turns abruptly eastward to the sea. Vast deposits of loess or yellow earth, blown in dense clouds from the deserts by the "*yellow wind*," covers the north of China to a depth of 2000 feet in some places. The rivers flowing across it carve out gorges with straight cliff walls, in the caves of which millions of people live. This is the most fertile soil in the world, never needing manure, and from it yellow has become the imperial colour of China, the Emperor himself being styled the *Yellow Lord*. The Yellow River is named from this yellow earth with which its water is charged, and by which its bed has been silted up until the stream runs high above the plain. In spite of hundreds of miles of embankments the course often changes. Until 1852 it ran south-east to the Yellow Sea; then the embankments burst 300 miles from the mouth, and the impetuous stream half a mile wide set north-east to the Gulf of Pe-chi-li, on the other side of the rocky Shan-tung peninsula. In 1887 the banks burst again at the same place, and the turbid floods overwhelmed thousands of villages and drowned more than a million people. This rebellious river is well called *China's Sorrow*. Both of the great river-basins contain coal deposits of fine quality more extensive than those of any other country; iron and copper also abound. Although grimy coal junks carry thousands of tons down the rivers to the cities every year, the mines have as yet scarcely been worked at all, because the Chinese neither use steam machinery nor allow railways to be made.

Many of the great towns are, however, joined by telegraph wires. Government cart roads and canals are maintained in the northern provinces, but in the south the rivers are the chief highways, the land routes being mere footpaths.

**283. Climate of China Proper.**—The climate is colder than in the same latitudes in Europe, and the ample rainfall is influenced by the monsoons, which blow all summer from the south-east laden with moisture, and all winter from the north and north-west, bringing dry cold weather. Tremendous cyclonic storms, called **typhoons**, are common, and the navigation of all the seas along the coast is consequently very dangerous.

**284. The Vegetation of China Proper** is varied. The northern forests of oak and pine have been much reduced, but all over the south the giant hollow **bamboo** is used for every purpose, from building houses to furnishing pipes for supplying water and even gas. The name *Flowery Land* has been given by the Chinese to their country on account of the beauty of the camellias, azaleas, and innumerable other blossoms which grow wild. The chief cultivated crops are **millet**, **maize**, and **rice** on the rich yellow earth, with tea, cotton, and **sugar-cane** in the south.

**Silkworms** have always been cultivated in the mulberry groves to an enormous extent. Tea is the favourite beverage, and silk is the most common material for the clothing of both men and women. These two commodities make up almost the whole exports from the country. Land is too valuable to be used for pasture, and there are consequently comparatively few cattle or sheep in the eighteen provinces.

**285. People of China Proper.**—The people have been an intelligent, civilised, and educated race for thousands of years, but they are very exclusive and conservative. Printing, the mariner's compass, the use of gunpowder were all understood ages before they were dreamt of elsewhere; but the Chinese have not improved their processes for centuries, except that the navy now possesses modern ironclads, and the army European rifles. They are persevering, quiet, orderly, very thrifty, and eager to trade with foreign nations, but only twenty-two of the

seaports are open to foreign vessels. The State religion is the philosophy of **Confucius**, which enjoins great respect to parents and the worship of ancestors. There are many **Buddhists**, and perhaps more **Taoists** or followers of a degraded magic-worship, and the Emperor is the head of all three religions, which are professed simultaneously by many of the people. Twenty million Mohammedans, about a million Roman Catholics, and a very few other Christians make up the followers of foreign creeds. Since the Manchu Conquest, all Chinamen shave their heads, leaving one long plait or tail of hair, of which they are very proud. To show that they are above working, the wealthy classes allow their finger-nails to grow an inch or more in length; and the feet of the Chinese (but not of the Manchu) ladies are compressed and deformed, so that their attempts to walk have gained them the name of *tottering lilies*.

**286. Towns of China Proper.**—China has more large cities than any other country, but the exact population is not known. **Peking** (500), on a dreary plain close to the Great Wall in the north, is divided into two square walled towns: one occupied by Manchus, the other by Chinese. In the former the Emperor resides in great state. A canal, frozen for two months in winter, leads to the river Peiho, and so gives access to the seaport **TIENTSIN** (950), 30 miles from the Gulf of Pe-chi-li. From here the **Grand Canal** runs south through a series of lakelets for 700 miles, connecting with the Yellow River and the Yang-tse, and on to **JIANG-CHOW** (600), where it terminates. **SINGAN-FU** (900), a great walled town 6 miles square, near the bend where the Yellow River turns from south to east, is more important than any on the lower course of that uncertain stream, which is everywhere too swift to be easily navigable. **NANKIN** (150), formerly the capital of China, and once the largest town in the world, stands about 200 miles up the Yang-tse. It gave its name long ago to Nankeen cotton, which was manufactured there. The great tea-ships ascend 400 miles farther, passing dozens of large cities to **HAN-KOW** (750), where they take in their fragrant cargo about the end of May, amongst thousands of native junks which crowd the stream, here a full

mile wide. SIANG-TAN, on a southern tributary, is the centre of a great drug-growing region, and prospers well, as the Chinese are particularly fond of taking medicine. Steamers ascend the Yang-tse to I-CHANG, the most inland treaty port, 1000 miles from the sea, and smaller vessels go hundreds of miles higher. CHING-TU, said to be the most beautiful town in China, with



FIG. 13.—SCENE IN A CHINESE VILLAGE. A WEDDING PROCESSION  
HEADED BY A GIANTESS AND DWARF.

the most artistic and cultivated people, lie on a remote tributary near the bordering mountains of Tibet. NIANGHAI (360), on a river close to the Yang-tse estuary, is a compact Chinese city, with extensive and beautiful suburbs, occupied by foreign merchants, who transact most of the sea-trade of the Empire. Southward the shore is dotted with treaty ports. Of these NING-PO (240) was the headquarters of the British fleet in the first war, when Indian opium was forced on unwilling China, and



since then it has become a centre of Protestant missions. **FOO-CHOW** (630) sends out great cargoes of tea; and **AMOY** (100), still farther south, has the best harbour in China. The fertile island of Formosa lies opposite, with coalpits at **KE-LUNG** in the north. The British island colony of **HONG-KONG**, along the north-western shore of which runs the long street of its capital **VICTORIA** (140), crowded with traders of every nation, mounts guard at the north entrance of the Si-Kiang. The smaller Portuguese colony of **MACAO**, which once monopolised European trade with China, occupies a point on the south shore of the estuary. On the river itself stands **CANTON** (1600), the largest city of China. Its quaint pagodas rise from the narrow streets of bamboo houses, with fantastic flapping sign-boards; but the broad river is as busy as its shores, rows upon rows of house-boats being moored in regular lines, where hundreds of thousands of the people live. In this neighbourhood the great Taiping rebellion, which nearly split the Chinese empire before it was quelled, had its rise about fifty years ago. The mountainous province of *Yunnan*, bordering Burma, is the chief opium-growing and copper-mining district of the Empire.

**287. Manchuria**, between the Great Wall and the Amur, occupies a central grassy plain, through which the Sungari River flows northward to the Amur. The plain is bordered by the **Chingan Mountains** to the west, and the dazzling limestone chain of the **Long White Mountains** to the east. Chinese education and customs are gradually spreading amongst the brave and warlike Manchu people. In addition to their ordinary livestock, the farmers keep large herds of dogs, slaughtering them in spring for their skins, which become covered with beautifully soft thick hair during the severe winter. **KIRINOULA** (150), on the Sungari, the capital of the province, and **MUKDEN** (150), on the southern plain, are the chief towns.

**288. In Eastern Turkestan** the chief town is **YARKAND** (120); the native Mohammedan city is overlooked by a great Chinese fortress with a strong garrison since its subjugation in 1878. In **KASHGAR** large quantities of cloth are woven from the marvellously fine wool of the country. **KHOTAN** is prized

by the Chinese for the precious jade pebbles which abound. All the towns are situated on streams running east from the great mountainous amphitheatre, of which the Pamir occupies the centre, to join the **Tarim River**. This is as long as the Danube, and flows eastward, to lose itself in **Lob-nor**, a reed-choked lake in a barren desert, where the wild camel lives. Few Europeans have ventured amongst the fierce tribes of this region, and still fewer have returned to tell the tale.

**289. Jungaria**, north of the Tarim basin, slopes westward towards Lake Balkash, between the Tian-shan and Great Altai ranges. Although presenting the easiest over-land passage from Europe to China, and although it was the site of a great empire in the seventeenth century, it is now a poor province, peopled by Chinese exiles and Kalmuk refugees from Russia. **URUMTSI**, in the south, is the chief town.

**290. Mongolia**, to the north, is peopled by mounted nomads who scorn to go on foot. They are no longer the united nation of heroic warriors who conquered the world under Jenghis Khan, but scattered tribes of herdsmen, all jealous of each other, and their chiefs are pensioned by the Chinese Emperor. In religion they are Buddhists of a debased type, tens of thousands of their lamas or monks living on charity in the religious houses called *lamasseries*. The chief lamas are burnt after death, but the bodies of common people are exposed to beasts and birds of prey. "The ravens," the Mongols say, "are our cemeteries." The land slopes on the whole to the east, and averages about 3000 feet above the sea, with a climate of great severity, and a barren soil growing little but grass. At the western boundary a tract of fertile land is part of the caravan route between **KAN-CHOW**, at the base of the Nan-shan, and **HAMI**, at the base of the Tian-shan Mountains on the road to **URUMTSI**. This belt of verdure separates the Tarim desert on the west from the dreary wastes of the Gobi or **Shamo** (*i.e. Sand Sea*) to the east, which the superstitious Mongols suppose peopled by evil spirits (see § 88). The village of **MAIMACHIN** (*i.e. Trade Town*), close to **Kiakhta**, is the chief trading place with Russia. The Russian post-route passes **URGA**, the chief town, where great triennial

fairs are held, and then strikes south-eastward across the Gobi, 800 miles to Peking.

291. Tibet, the highest region in the world, belongs to the Chinese empire; but the **Great Lama** or chief priest of the Buddhists, who is supposed to be an incarnation of Buddha himself, is the absolute monarch in home affairs. The sacred words, "*Om mani padme hum*," of which no one understands the meaning, form the one prayer of the Tibetans, and are viewed as a charm, giving protection and good luck when said or seen. They are written on everything, and hundreds of millions of printed copies are circulated by the lamas; the very cliffs and mountain sides are carved with the magic line in gigantic letters at the public expense, so that "he who runs may read." The people, although lacking in enterprise, are brave, frank, generous, and kindly; yet strangers are rigidly excluded, and the Himalayan passes are closely guarded against them. The people are civilised, extremely polite, and education is much more general than in China. The climate is very severe; and although barley sometimes ripens, and trees are found in the lower valleys, thin hard grass is the chief vegetation. On this live herds of wild **antelopes** and flocks of fine-haired **goats**, shaggy **yaks** or small oxen, and hardy little **sheep**, the common beast of burden. In the long valleys north of the Himalayas, the Sutlej and Indus flow west through Kashmir; while the mysterious **Sanpo** pours eastward, sometimes on the flat table-land, again through tremendous gorges and falls. Only in 1888 was it finally proved by a Hindu explorer that this river is the upper part of the Brahmaputra. Most of the high villages have to be deserted in winter, when they are buried in snow. **LASSA** (*i.e. Throne of God*), the capital, is the most holy city of the Buddhists, and contains more priests than laymen. It stands 2 miles above sea-level; and the houses, laid out in clean regular streets, are very fantastic, some being built of the interlaced horns of cattle and sheep set in cement. The palace of the Great Lama surpasses most of the buildings in Asia for splendour.

## KOREA.

292. The peninsula south of Manchuria, resembling in form a great silk worm shrinking back from China, is known abroad as **KOREA**, but the people call it *Chaosien* (*i.e. Land of the Morning Calm*). It is an absolute monarchy, the King being held so sacred that for a subject even to pronounce his name is high treason ; but he sends tribute to the Emperor of China, who regulates the foreign policy of Korea. The people, unlike the Chinese, are divided into rigid castes, the humbler classes scarcely daring to look at a member of the learned or military aristocracy. Although Buddhists, they pay little attention to religious services, and greatly despise the priests, who are treated as of the lowest castes. Little is known of the country, as no foreigners are allowed into the interior. The forests harbour bears, tigers, panthers, and foxes, the skins of which are exported. The **gin-seng** root, yielding an intoxicating drug which is much valued in China, is largely cultivated. The language is different from Chinese, but the Chinese ideographs are used in writing, so that a Korean can read a Chinese newspaper, although if it were read to him by a Chinaman he would not understand a word.

Of the hundred and fifty walled towns in the kingdom, **Seoul** (200), the royal residence in the west, is the best known. Within its walls no temples or priests of any kind whatever are tolerated. Three seaports are open to foreign trade by special treaties, viz. **FUSAN** in the south-east, **YEN-CHUAN** and **YUERSAN**.

## JAPAN.

293. Surface.—The Empire of **JAPAN** (*i.e. the Land of the Rising Sun*) is rather larger than the United Kingdom, which it strikingly resembles in being an island group lying off a populous continent, and in containing coal, iron, and copper, with a coast full of good harbours. It comprises *Hondo* or main island, curving away from Korea, with small *Sikoko* and the larger *Kiusiu* to the south, tailing off in the *Loo-Choo* archipelago (so called by the Chinese, who have no *R* sound ; the Japanese say *Riu-Kiu*).

North of Hondo lies the thickly-wooded, snail-shaped island of *Eso*,<sup>1</sup> the back of which is separated by the narrow Laperouse Strait from Saghalien, which was given to Russia in 1874 in exchange for the narrow line of the *Kurile* islands, running from the "snail's-horns" to Kamchatka. All these mountainous islands, full of fine scenery, are mainly composed of volcanic rocks. There are many active and innumerable extinct volcanoes, while earthquakes, great or small, happen almost every day.

**294. Climate and Crops.**—The climate is, on the whole, colder than that of Europe in the same latitude. Snow falls very thickly in *Eso* with the westerly winter monsoons, and often on the west of *Hondo*, but the east is clear and dry. The gales prevailing in winter almost stop shipping on the west coast. Spring is mild and very wet, the south-east monsoon deluging the islands with rain, which brings on a rapid and very luxuriant vegetation. Summer is warm and damp, and cyclones, dangerous to shipping, are very common; but autumn is always clear, bright, and refreshing. Rice is the most abundant food grain, but wheat and barley are also grown; and there are large plantations of branching tea-bushes, and of mulberries alive with silkworms. The characteristically Japanese lacquer-tree, the juice of which forms exquisite varnishes, used in the well-known ornamental woodwork, is carefully protected and planted. Flowers are much appreciated, and the chrysanthemum, the emblem of the country which figures on the postage stamps instead of the monarch's head, is cultivated in endless variety.

Until recently butcher-meat was never eaten, and as grass-land is scarce and farms small, there are few domestic animals.

**295. People.**—Northern *Eso*, like the south of Saghalien, is partly peopled by the long-bearded, hairy *Ainos*, a gentle, honest, and good-natured race worshipping the powers of nature, and living by fishing and hunting. They are disliked and despised by the true Japanese of the main islands, who themselves somewhat resemble the people of China, although the upper classes are fairer and have finer features. Chinese ideographs

<sup>1</sup> Frequently called *Yeso*, but no Japanese word begins with the sound of *Y*, and this letter is now dropped in official publications.

are used in writing, but the Japanese language is quite different. The labour of remembering a separate sign for every idea is such a drawback to education that an alphabetic system of writing will probably soon be introduced. The people, although less persevering than the Chinese, have, since their great revolution in 1868, become much more progressive, accepting the advances of western civilisation. **Education**, which was always held in esteem, is now compulsory. The picturesque national **dress**, with the swords and fans, that showed the rank of the wearer, is being discarded in the large towns for European fashions. English is the commercial language, and British or American professors teach science in the various colleges, while European officials superintend the extending railways and the mines until the natives have picked up the methods. The people keep their old **artistic nature**, love of tasteful decoration, and excessive cleanliness in person and houses. As in China, three ancient religions are professed, but **Buddhism** predominates. The great Jesuit missionary Xavier converted hundreds of thousands of the Japanese to Christianity in the sixteenth century, but in consequence of persecutions that have now ceased, few native Christians remain. The **government** was absolute until 1889, when the *Mikado* or Emperor called a parliament, and commenced to rule as a constitutional monarch, founding the system of government on the pattern of Germany. Trade with foreign countries is encouraged at the six chief harbours, but only Japanese vessels are admitted to the others.

**296. Towns of Eso.**—In *Eso*, where there are vast coal deposits, **SAPORO**, on a salmon-crowded river of the west coast, is the chief town; but the best harbour is the deep, safe bay of **HAKODATE**, in the south, which is one of the treaty ports.

**297. Towns of Hondo.**—This is the most densely peopled and important island. All its rivers are short, chiefly mountain torrents trickling through wide wastes of fens when not in flood. The largest of these, the *Shinano* (*i.e. river of a thousand bears*), enters the sea, on the west, at the harbour of **NIIGATA**, a treaty port deserted in winter when the north-westerly gales blow. **Tokyo** (900), on Edo Bay on the east coast, has been the *Mikado's*

residence since 1868 ; and round the hill crowned by his palace the light houses of bamboos and paper extend for miles. They are not damaged by earthquakes, but are often burned down in hundreds. *Jinrikshas*, or two-wheeled carriages drawn by men, take the place of cabs, and thousands of them always throng the streets. YOKOHAMA, 18 miles south of the capital by rail, has a fine deep-water harbour on the same bay ; here most of the foreign merchants live, and the steamer traffic is immense. Not far to the west the gently sloping volcano of **Fusiyama**, snow-clad for ten months of the year, rises grandly above the forests and the fields, and is revered as the sacred centre of the Empire. In the midst of the best tea-growing plains of the south, KYOTO (260), the ancient capital is still the centre of refinement and artistic industry, and in one of its thousand temples preserves a bronze statue of Buddha more than 50 feet high. **Lake Biwa**, some distance in the interior, is visited by crowds of tourists, native and foreign, on account of its romantic beauty. A railway runs south-east to **OSAKA** (350), the *Venice of Japan*, on the shore of the lovely island-studded *Inland Sea*, which separates *Sikoko* from *Hondo*, and throughout its 200 miles of length presents the scenery of Norway under the sky of Italy. Another branch westward reaches the double seaport town of **Hyogo** and **Kobe**, where many foreign merchants live.

**298.** **NAGASAKI**, on the deeply indented east coast of *Kiusiu*, has the grandest harbour of all, surrounded by steep green hills, and guarded by strong modern forts. The little island of *Takasima*, outside the bay, contains the most actively worked coal-mine of Japan

## STATISTICS OF THE COUNTRIES OF EURASIA ABOUT 1886.

Name.	Government.	Area, square miles.*	Population		Exports.† Million pounds.	Imports.† Million pounds.	Time at capital ‡
			Millions	Per sq. mile.			
United Kingdom	Lim. mon.	121	37	307	290	390	12 noon.
Norway . . .	"	123	2	16	8	8.5	12.43 P.M.
Sweden . . .	"	171	4.7	28	13	17	1.12 "
Denmark . . .	"	14	2	140	10	14	12.50 "
Holland . . .	"	13	4.4	352	70	90	12.18 "
Belgium . . .	"	11	6	620	51	58	12.17 "
France . . .	Republic .	204	38	187	174	217	12.9 "
Spain . . .	Lim. mon.	197	17	88	28	33	11.40 A.M.
Portugal . . .	"	36	4.7	131	5	7	11.23 "
Germany . . .	"	211	47	221	210	210	12.53 P.M.
Switzerland . .	Republic .	16	3	186	26	30	12.30 "
Italy . . .	Lim. mon.	114	30	261	43	54	12.50 "
Austria Hungary	"	241	39	167	60	51	1.5 "
Rumania . . .	"	48	5.5	113	9	12	1.44 "
Bulgaria . . .	"	45	3	63	2	1.7	1.33 "
Servia . . .	"	19	2	107	1.5	2	1.22 "
§Turkey . . .	Absolute .	793	21	27	11	17	1.55 "
§Greece . . .	Lim. mon.	27	2	79	3.7	4.5	1.35 "
§Russia . . .	Absolute .	665	104	12	92	83	2.5 "
Arabia . . .	"	970	3	3	..	..	..
§Persia . . .	"	628	7.5	12	4.5	5.7	3.20 P.M.
§Afghanistan . .	"	279	4	15	..	..	..
§Buluchistan . .	"	160	0.5	5	..	..	..
Indian Empire	British Crown	1570	257	170	85	65	5.53 P.M.
Ceylon . . .	Repres. Colony	25	3	120	3.5	4.7	5.19 "
§Chinese Empire	Lim. mon.	4260	415	98	20	22	7.46 "
§Siam . . .	Absolute .	250	6	24	2	1.5	6.42 "
French Indo-China	Colony . . .	500	19	35	..	..	7.6 "
Japan . . .	Absolute .	148	38	277	8	6.5	0.19 "
Dutch East Indies	Colony . . .	655	28	11	16	13	7.7 "
Straits settlements	Crown Colony	15	0.5	357	18	20	6.55 "
Philippines . .	Spanish Colony	115	7.5	65	5	4	8.4 "

\* Thousands. † Average for years 1882-86 ‡ At Greenwich noon.

§ Statistics uncertain.



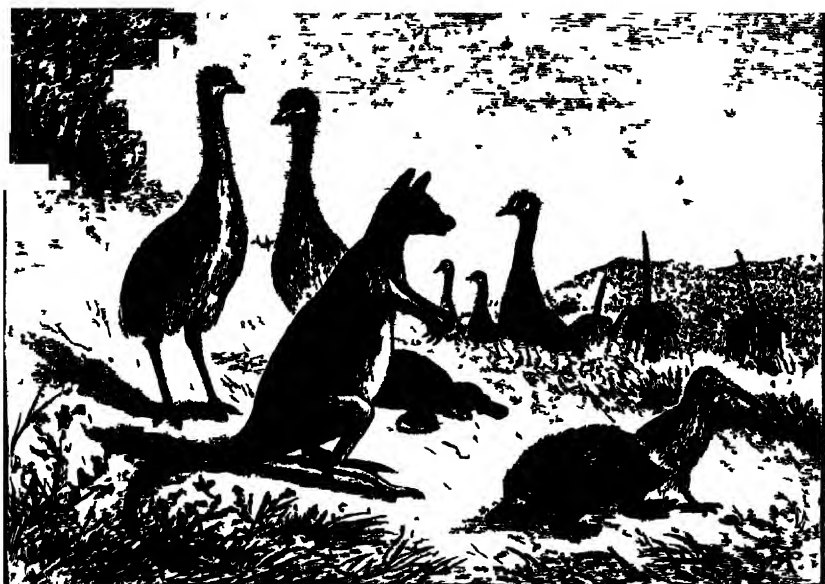


FIG. 14.—CHARACTERISTIC ANIMALS OF AUSTRALIA—EMU, KANGAROO, PLATYPUS, ECHIDNA, AND THE ALBINO OF NEW ZEALAND

## CHAPTER XIII

### THE CONTINENT OF AUSTRALIA

**299. Coastline.**—The great island which forms the continent of Australia (*i.e. Southern Land*), nearly 3,000,000 square miles in area and distant 11,000 miles from Great Britain by the shortest route, lies entirely in the southern hemisphere. The greatest length from east to west is 2300 miles in lat.  $26^{\circ}$ ; from north to south, 2000 miles in long.  $143^{\circ}$  E., which runs through Cape York, the most northerly point. But the incurving of both the north and south coasts brings them within 1100 miles of each other in long.  $137^{\circ}$  E. Cape York, in  $11^{\circ}$  S., is separated by Torres Strait, 90 miles wide, from New Guinea. The coast runs south-eastward from this point, full of little capes and bays, with islets lying off them, and backed by near highlands or moun-

tains, from which only two large streams, Burdekin River opening in lat.  $19^{\circ}$  S., and Fitzroy River on the tropic of Capricorn, are sent down to the Pacific. The **Great Barrier reef**, beginning as a narrow belt of coral rock close to shore in Torres Strait, runs along the coast for 1200 miles, becoming wider and more distant until it ends 100 miles off the mouth of the Fitzroy, as an expanse 70 miles wide of reefs and atolls over which the waves break. It forms a natural breakwater, keeping a calm strip of sea along the coast which steamers can use, although the channel is narrow and difficult to steer through because of sunk coral reefs. Several channels of deep water cut through the great barrier—the widest lying off the Burdekin River,—and these allow vessels to enter from the Pacific. From the mouth of the Fitzroy River there is a wide, smooth outcurve of low rocky coast, attaining its farthest east in Point Danger ( $154^{\circ}$  E.), and broken with several deep harbours, including the fine branching inlet of Port Jackson. At Cape Howe the coast turns abruptly westward, and Bass Strait separates the large triangular island of **Tasmania**, which rises on the continental shelf 150 miles to the south. Wilson Promontory, in lat.  $39^{\circ}$  S., is the most southerly point of the continent, and forms the eastern boundary of the incurve which runs up to Port Philip Bay. From Cape Otway, the western boundary of this bay, the Great Australian Bight extends westward, curving slightly to the north. Its coast is at first fretted by the mouth of the Murray River and the narrow north-running Gulfs of St. Vincent and Spencer, with Kangaroo Island and several small peninsulas; but farther west a smooth line of perpendicular white limestone cliffs, about 500 feet high, extends for 1000 miles unbroken by a single stream or harbour. The fine inlet of King George's Sound, in lat.  $35^{\circ}$ , is the farthest south part of West Australia, and the coast begins to trend northward; the grand rocky headland of Cape Leeuwin, being the south-west corner of the continent. From Geographe Bay, just beyond it, the wooded coast broken by the Swan River, runs north-north-west for 500 miles to Steep Point (the most westerly, reaching  $113^{\circ}$  E.), which, with Dirk Hartog Island, shuts in the deep double inlet of Shark's Bay. Farther north, at the north-

pointing peninsula of North-West Cape, the coast turns north-eastward, at first smooth in outline, then with a succession of bays and capes facing the southern Sunda Islands. The broad broken projection of Arnhem Land carries the middle of the north coast far into the **Arafura Sea**, and there are many small continental islands lying off the shore. The wide shallow waters of the **Gulf of Carpentaria**, cutting a square of 300 miles out of the northern coast, are bounded by the great north-pointing Cape York peninsula.

**300. Configuration.**—A narrow mountainous belt, called the **Great Dividing Range**, sweeps round close along the south-east and east coasts in a series of connected ranges. It is highest in the south-east corner of the continent, where the culminating point is **Mount Kosciusko** or *Mount Townsend*, with a height exceeding 7000 feet, which is lower than the culminating point of any other continent. The range to the north diminishes in height, but the slopes of the mountains are steep. At the northern end of the chain the short ranges run in various directions, but they sink down north of the Fitzroy to a uniform high plain about 2000 feet above the sea, filling Cape York Peninsula. This high plain extends to the west as a narrow band which widens and covers the whole continent towards the west. But in the south-east there is an extensive low plain, the **Australian Basin**, dipping to the south-west. This seems to have been a shallow enclosed sea at one time, from the wide belts of coral limestone which run round it. All the great rivers of Australia flow into this wonderful hollow. On the east and south-east sides of the Basin the Great Dividing Range rises steeply, and long rivers flowing down the gullies of the mountains spread across the plain. Chief of these is the **Murray**, which rises close to Mount Kosciusko, and flows west for 600 miles (more than 1000 by its windings), receiving the **Lachlan**, swollen by the **Murrumbidgee**, and farther on the still longer **Darling**, all flowing from the north-east. After these rivers join, the Murray turns abruptly southward and flows through gorges cut like terraces in the limestone rocks to the sea. The western half of the great depression has many

long rivers, most of which dry up as they flow along ; but some reach **Lake Eyre**, the northernmost of several great shallow salt lakes in a hot desert region, with no outlet to the sea. Along the west coast the edge of the high plain is marked by a gentle range of hills, and to the south the cut edges of the limestone low plain of the Australian Basin form the cliffs of the Australian Bight. The **Flinders** and **Mount Lofty** ranges which surround **Spencer Gulf**, are isolated from the main high grounds. They separate the drainage area of the **Murray** from that of the salt lakes. In the very centre of the continent the high plain swells up into several ranges of mountains which are rarely visited and little known.

Most of the rivers of the west are small, and in the interior they are mere stony channels, with a chain of shallow pools in the dry season. On the north and east coasts they are more permanent, although short and liable to alternate droughts and floods.

**301. Geology.**—The rocks are, as a rule, very old stratified deposits, much of the interior being rough “desert sandstone,” but the whole of the south-west of the continent is granite, and the **Dividing Range** is pierced by lava streams poured out from volcanoes that have not long been extinct. For hundreds of miles along their eastern slope thick coal seams crop out ; these are far more valuable in the long run than the gold which abounds in quartz veins all over the east.

**302. Climate.**—We must remember that since **Australia** is in the southern hemisphere, the north is much hotter than the south. Along the coast the heat is not nearly so extreme as in the interior ; yet snow, except on the high mountains, is very rare even in the south.

The seasons alternate between a hot bright summer and a warm bright winter ; and thanks to the dryness of the air, the continent as a whole is perhaps more favourable to health than any other in the world. The north and middle of **Australia** lie within the zone of the south-east trade winds, but the south enters the region of the “roaring forties.” The changes of the seasons, however, produce monsoon winds, which blow in-

wards from the sea on all sides in the summer half-year (October to March), and outwards from the land on all sides in the winter half-year (April to September). The result is that the rain-bearing south-east trade wind on the east coast is strengthened in summer, and then the northern highlands are plentifully watered; but it happens that farther south the greater cold of the winter season brings most of the year's rainfall at the time when the wind from the sea is weakened by the land monsoon. On the west coast in summer the south-east trades are quite stopped by the north-west monsoons, and on the whole there is a light westerly breeze bringing frequent showers. As much rain falls in the north-east on the average as on the west of Scotland (60 to 80 inches a year), in the south-east it is less than in south-eastern England (20 inches), and on the west coast just as much as in eastern Scotland (30 inches).

As the highest land surrounds the inner plains, vapour carried by the sea-winds is all condensed into rain close to the coast. Much of the interior is, therefore, almost rainless, and forms an arid desert, like the Sahara or the Gobi, but even more desolate. But the porous rocks underground seem to be soaking with water, which can be reached in some places by boring Artesian wells deep down through the hot dry sandstone that paves the surface. Australian climate is remarkably uncertain; in some years no rain whatever falls over vast areas, and the grass entirely withers up; at other times tremendous deluges come, lakes are formed in the hollows, and a grassy mantle spreads for miles over the desert. The storms of lightning, wind, and rain are terrific; they come suddenly, do great damage, but soon cease. In summer hot winds from the north-west often blow over the eastern mountains, scorching up the vegetation. These are usually succeeded by "southerly bursters," which are strong gales, lasting a much shorter time, but carrying clouds of the finest dust.

**303. Native Plants.**—The native plants of Australia are very peculiar. Thousands of square miles in the desert interior are thinly covered with coarse tufts of *spinifex*, a grass that no animal can eat; its spiky blades are so hard that they wound

and often kill horses and cattle passing over them. Next in extent is the **mallee scrub**, also growing in dry sandy regions; its straight branches, 10 to 15 feet high, cover the ground as closely as stalks in a wheat-field. The less common **mulga scrub** is a bushy dwarf acacia, armed with sharp spines, which make it almost impassable for travellers. *Heaths*, as a kind of low woody shrub is called, often cover miles of country with a carpet of brilliant and fragrant flowers. In spring, where rain is plentiful and rivers flow, there are boundless plains thick with the finest **grass** in the world, extending to the horizon on every side. On the mountain slopes and along the **coasts** there are grand forests of *eucalyptus* or gum-trees. These are not **shady** like the trees of other countries, for the leaves are set edgewise like an opened venetian blind, and do not obstruct the light. Their dingy olive-green colour varies neither in spring nor autumn, and their height is remarkably great; 300 feet is common, and one giant gum tree measured nearly 500 feet. The *beef-tree*, with no leaves, but long drooping green branchlets instead, yields a useful wood exactly the colour of raw beef; but the *acacias* or *wattles*, with their fragrant yellow blossoms, are the most abundant of all.

304. The **Native Animals** of Australia are of a very ancient type, and in other parts of the world only remains of such creatures are found as fossils. The native dog or *dingo*, and the great fruit-eating bat or *flying fox* are the only ones which resemble those of other continents. Almost all the other mammals are marsupials carrying their young in a pouch for a long time after they are born. Some **kangaroos** are of great size, measuring more than 5 feet high when they sit up in their favourite position, balanced by their heavy tail. The small fore-legs are not used in running, for the animal takes enormous leaps on its long powerful hind legs. Opossums living on the trees, and most active on moonlight night. heavy burrowing blunt-faced wombats; *koalas*, or "bears," as they are called, with a gentle look and tufted ears; graceful little flesh-eating "native rats" or *dasyurs*, and the platypus or duckbill, which has a bill and lays eggs like a bird, are the most characteristic kinds.

The birds are varied and brilliant; there are crested **cockatoos** and parrots of every kind; the graceful lyre-bird, with its remarkable tail; the bower-bird, which lays out the ground before its nest like an ornamental garden; and the large ostrich-like **emu**. Gigantic lizards, 6 feet long, live in the plains; while true **crocodiles**, and the rare mud-fish or *ceratodus*, are found in the northern rivers. Flies often swarm in extraordinary numbers, and the **mosquitoes** in summer are an annoying plague.

**305. Aboriginal People.**—The original natives are a depraved set of savages of the Black type who cannot build houses. The men, with thick beards and repulsive features, treat the still uglier women with shocking cruelty, and when old people become a burden, they are often killed and eaten. The different tribes have no regular chiefs nor any government; they speak a variety of languages. A few have advanced enough even to make rough carvings or sketches, but of course writing is unknown. Their food, in addition to ordinary birds and beasts, includes snakes, frogs, grubs, and insects; but they have become very skilful in killing the larger animals. The curved *boomerang* which, when thrown, flies back to the hunter after striking the mark, and the throwing-stick, by which a spear can be cast with great force, are two of their commonest weapons. They are marvellously clever in finding water in deserts, and in tracking men or animals they wish to follow. These natives make small progress in civilisation, and, like most savage tribes, near white settlers, they are rapidly dying out; their number last century was 150,000, and now there are not more than 70,000.

**306. Discovery and Settlement.**—Australia, with its singular shape, its strange plants, curious creatures, and wretched people, remained for centuries unknown to civilised mankind. It was probably first seen in the middle of the sixteenth century by Spanish voyagers; early in the seventeenth century Dutch ships sailed southward from their colonies in the Eastern Archipelago, and one of these left its name in *Arnhem* peninsula, another in Cape *Leeuwin*. Various subsequent Dutch and French explorations are kept in mind by the names all along the north

and west coasts. The east coast was visited for the first time in 1770 by the great navigator Cook, who commenced giving English names to the bays and capes of New Holland, as the continent was then called. In 1788 a shipload of British convicts was sent to **Botany Bay**, on the east coast, which had been called *New South Wales*, from a fancied resemblance to the west of Britain. But it was in the grand harbour of Port Jackson, and not in Botany Bay at all, that the convicts were settled, and there the first cattle and sheep began to graze on the new pastures. Henceforth the exploration of the coasts went on apace, and the names of straits, bays, capes, mountains, rivers, and political divisions which were given are all English. These names were taken from the travellers themselves or the colonial governors or leading statesmen, or are simply after places at home. The heroism of explorers in traversing the unknown deserts from north to south and from east to west, often crossing hundreds of miles of sand-ridges set with spinifex, without finding a single drop of water, is unsurpassed in history. A British settlement was made on the west coast, under the name of *Western Australia*, in 1829, and five years later an English company started the colony of *South Australia*, round the great gulfs of the south coast, with a special Act of Parliament excluding convicts. In 1850 the Southern part of New South Wales, "*Australia felix*," was made an independent colony, with the name of *Victoria*, and in 1859 the Moreton Bay settlement in the north was also separated with the name of *Queensland*, both named in honour of Queen Victoria.

**307. Progress.**—In all of the colonies the early settlers met with great difficulties, but year by year these were overcome, the rich grassy plains were found to be wonderfully suitable for sheep rearing, the soil in many places produced European and Asiatic crops abundantly. The vast mineral resources were discovered and made use of. Emigrants crowded into the continent from Britain and Germany, Chinese labourers came across from the "flowery land" to get a share of the work, and now five flourishing colonies, which are almost independent nations, fringe this continent which, unlike all others, has no buildings older than



a century, and no battlefields to keep in memory. The colonies being young are growing fast, and new regions are always coming to the front in importance, so that what is a village of a few hundred inhabitants one year, may become a large town the next. There are no poor people and no idle people except in the two great cities. The small towns are very enterprising; they all have hotels, a newspaper, a racecourse, a public park, and very often a lunatic asylum, for insanity is much more common than in the United Kingdom.

In each colony protective duties are charged on everything that can be made or produced within its boundaries. The complete telegraph system of Australia is joined by a cable from Palmerston, on Port Darwin, to Banjoewangi in Java, thence to Singapore, from that to Bombay, where it joins the Indian system, reaching England through Persia or Turkey.



FIG 15.—A VIEW ON THE RAILWAY AT THE BLUE MOUNTAIN RAILWAY

## CHAPTER XIV

### THE COLONIES OF AUSTRALIA

#### QUEENSLAND

308 The colony of **QUEENSLAND**,  $5\frac{1}{2}$  times the size of the United Kingdom, occupies the whole north east of the continent. The **boundary** from New South Wales on the south, runs from Cape Dangui, at the centre of the great coast outcurve, south westward to lat  $29^{\circ}$  S, and along that parallel to  $141^{\circ}$  W. Here the boundary turns north, and runs west, traversing the barren region where the explorers Burke and Wills died of thirst at Cooper's Creek in 1861, and finally runs northward along the meridian of  $138^{\circ}$  E, bounding the northern territory of South Australia for 700 miles to the Gulf of Carpentaria. There are thus parts of four river systems in the colony (1)

Those flowing down the well-watered and fertile eastern highlands to the **Pacific**, on which most of the towns are situated ; (2) the head waters of the **Darling**, flowing over the gentle grassy western slopes of the mountains in the south-west ; (3) the scanty streams that sometimes flow along the stony desert channels southward to **Lake Eyre** ; and (4) the short full rivers cutting their way northward, sometimes through dark rocky gorges 1800 feet deep, and crossing the Plains of Promise to the tangled forests of palm and cedar bordering the **Gulf of Carpentaria**. Partly because of the height of the fertile land in the north-east, partly because of the dryness of the climate and the absence of hot winds from the interior, Queensland is the healthiest tropical country in the world, and the only one where Europeans have been able to settle comfortably for life.

**309. Resources.**—Many gold-fields are being worked, *tin* mines of great value have been opened, and coal, though little worked as yet, is abundant. The river deltas on the east being well suited for growing tropical plants, **sugar-canes** have been successfully introduced. **Maize** is the most widely cultivated grain. Off the coast in the warm clear water within the Barrier Reef Chinese and Malay fishermen dive for the fat **trepangs** or sea-slugs, which are exported to China for food, and the lustrous pearl-shells, from which mother-of-pearl is made. European settlers are engaged chiefly in tending the great herds of **cattle** and flocks of **sheep** on the cooler high plains. The great political difficulty of Queensland is to get labourers for the hot sugar plantations. The natives are particularly savage, and will not work steadily, negro slavery was prohibited before the colony was settled, so, unlike other tropical colonies, there are no negroes as in South America. Chinamen are numerous enough, but they prefer to go to the gold diggings. Consequently men are collected by "labour-schooners," or "*black-birders*" as they are called, visiting the islands of the Pacific and making the strong active natives promise to work for a term of years. So much injustice has been done in this way by heartless captains and greedy planters that Government has prohibited the trade after the year 1890.

Queensland has a responsible **government**—that is to say, there are two houses of parliament: the upper or Legislative Council is appointed by the governor who is sent out from London; the lower or Legislative Assembly is elected by the people.

**310. Towns and Railways.**—All the large towns are seaports, and from each a railway has been constructed running straight into the interior through the bustling villages of gold-fields, with their huge hotels, and over the wire-fenced pasture lands, where the train stops like an omnibus whenever a passenger wishes to get in or out. The “stations” of the *squatters* (wealthy sheep-farmers) are scattered sometimes hundreds of miles apart, but the settlers are so much at home on horseback that they think little of a ride of a hundred miles over the smooth country to post-office or market.

**Brisbane** (30) stands near the mouth of Brisbane River on Moreton Bay, which is sheltered by two large islands. It was founded as a convict settlement in 1825, and is now the capital. The chief railway runs west from it, through the coal-mining town of **IRSWICH**, for 400 miles across the elevated grassy sheep-runs of Darling Downs. A branch leaving the main line at **TOOWUMBA**, on the summit of the Dividing Range, curves southward west of the mountains to the tin mines of **STANTHORPE** (*i.e. Tin-town*), where it joins the New South Wales line. **MARYBOROUGH**, 150 miles north of Brisbane, has an exactly similar situation, being 25 miles up a navigable river entering a bay sheltered by a large island on the south. Its railway runs south for 50 miles to the gold-fields of **GYMPIE**. **ROCKHAMPTON** stands 350 miles north-west of the capital on both sides of the navigable Fitzroy River, and is the terminus of the Central Railway which traverses the rich grassy district to the west. **TOWNSVILLE**, amongst sugar plantations near the mouth of the Burdekin, has rail to **CHARTERS TOWERS**, on one of the richest gold-fields. **COOKTOWN**, 1000 miles from Brisbane, opposite an opening in the Barrier Reef, is the most northerly, and therefore the hottest town in Queensland, the mail steamers from Europe by Torres Straits call here, and tin, gold, rice, sugar, and sea-produce are collected.

## NEW SOUTH WALES.

311. The parent colony of **NEW SOUTH WALES** has a name disliked by the inhabitants, who wish to change it for *Australia*. It is  $2\frac{1}{2}$  times the area of the United Kingdom—that is to say, less than half the size of Queensland, though it is much more populous. Bounded on the north by Queensland, and on the west by the meridian of  $141^{\circ}$  E., separating South Australia, it has on the south a natural frontier towards Victoria in the Murray River. From the source of this river, just south of Mount Kosciusko, the boundary is continued eastward straight to the sea at Cape Howe.

The colony occupies three natural regions : (1) The region of Eastern drainage ; (2) the Mountain region ; and (3) the Plains. The soil of the narrow region of **Eastward drainage**, at the base of the Dividing Range, is fertile where it is renewed by the short rivers overflowing in the rainy season. The longest of these rivers is the **Hawkesbury**, the quicksands and floods of which made an enormous bridge necessary before a railway could be carried across it. The **Mountain region** of New South Wales includes the heights of the **Australian Alps** in the south, the **Blue Mountains** (named from the singular blue-green colour of their thick eucalyptus forests) in the centre, the **Liverpool Range** which, unlike the others, runs from west to east, and the **New England Range** to the north. It is a wild region full of cliffs and waterfalls thousands of feet high, in deep wooded ravines. There are even some broad valleys traversed by rivers, which escape underground, that are quite inaccessible to man. Mines of gold, iron, and coal occur abundantly. Sheep may be pastured on the hillsides, but the best grass-land consists of the **Region of the Plains** sloping westward beyond the mountains, and watered by rivers flowing to the Murray. The **Liverpool Plains** north of the Liverpool Range were once probably occupied by an inland sea, and now form a nearly flat expanse of grass, larger in area than Switzerland. East of the grassy plains a waste of salt scrub and thin grass covers the

wide low basin of the lower Darling. The large rivers of the western slope are navigable for small steamers in the wet season, but changes in the channel often prolong the voyage of a few days to weeks or even months. The Murrumbidgee and Lachlan flow on the whole westward to the Murray, the Macquarie, Namoi, and several others flow north-westward to the Darling, which then curves round, receiving no tributaries from the west, and flows south to the Murray. °

**312. Resources.**—Gold and good coal are the chief minerals produced, and the discovery of great silver deposits in the Barrier Range on the frontier west of the Darling has quite recently given rise to the mining town SILVERTON. Maize is the main crop, although wheat is also grown. Fruit comes to great perfection in the eastern coast-strip. But by far the greatest wealth of the colonists is in sheep, which graze everywhere, though mainly on the plains west of the mountains. There were 40,000,000 sheep in 1887, most of them merinoes of Spanish descent, and the wool shorn from them is the finest in the world. Practised shearers can clip 120 sheep a day, but working at that rate is so cruel to the animals that government has limited the daily work of each man to 90 fleeces. Next to the occasional droughts which sometimes kill millions of sheep, the worst enemy of the squatter is the common British rabbit. A few pairs taken out as pets many years ago ran wild and multiplied quickly. Millions of them are killed every year, and thousands of men make a comfortable living at this trade; but the rabbits have spread over nearly the whole pastures of the continent, and eat up the grass in many places, so that the sheep are starved.

**313. The government** is exactly like that of Queensland. Bands of convicts escaping to the remote regions when the colony was young, became *bushrangers* or armed robbers, who plundered defenceless sheep stations and shot the people. A strong force of mounted police, aided by the unequalled native trackers, has succeeded in putting down bushranging on a large scale, and no new convicts have been sent from Britain since 1840. There is a small but well-drilled volunteer army and the

beginning of a war fleet. Unlike Queensland, which is only divided into a few large districts, New South Wales has been marked off into about 120 small counties.

314. The famous harbour of **Port Jackson** is a great sea-inlet, branching into many bays and creeks; it is a mile wide at the entrance between the cliffy heads which are crowned by batteries 300 feet above the waves. **Sydney** (220), the capital, full of fine public buildings, gardens, and parks, stands on the south side 5 miles from the Heads, and its large suburb of *North Shore* opposite is connected by steam ferries. There is a well-attended university. A branch of the Royal mint here coins Australian gold, alloyed with a little silver to make it hard enough; hence the Australian sovereigns are paler in colour than the British, in which the gold is alloyed with copper. The largest ocean steamers come right up to the quays in the heart of the town even at low tide. River steamers run 14 miles higher to **PARAMATTA**, picturesquely placed among the most productive orchards, orangeries, and vineyards.

315. **Towns on the Great Northern Railway.** — The *Great Northern Railway*, crossing Hawkesbury River, skirts the coast to **NEWCASTLE** at the mouth of the Hunter. This town is named after the English Newcastle on account of the great coal-fields which its river crosses. Actively worked mines send coal to all the other colonies, to China, and even to San Francisco in the United States. The line next swerves westward, passing the flourishing double town of **MAITLAND** farther up the Hunter, where large quantities of wine are made, and then crosses the *Liverpool Range*. A branch westward over the wide sheep-dotted *Liverpool Plains* reaches beyond the neat little pastoral centre of **TAMWORTH** on the *Namoi*, now lighted by electricity. The main line runs northward on the crest of the mountains past **ARMIDALE**, where, on account of the elevation, snow lies in winter, and along the western slope of the *New England Range* to **TENTERFIELD** in the tin district, more than 400 miles from Sydney, and it joins the Queensland line near Stanthorpe.

316. **Towns on the Great Western Railway.** — The *Great Western Railway* climbs the Blue Mountains by a series of

zig-zags cut in the steep wall-like eastern slope, the engine alternately pulling and pushing the train as it shunts from one zig-zag to the other. A long incline skirting the edge of vertical precipices 1000 feet deep leads to MOUNT VICTORIA on the summit 3000 feet above the sea. Here a branch runs north on the top of the range to MUDGEE, where there are gold-mines. The main line descends the steep western slope by a second series of zig-zags to LITHGOW and several other coal-mining and iron-smelting villages. It sweeps over the high Bathurst Plains past BATHURST itself, the "western capital," amongst great wheat-fields, 120 miles from Sydney, and on north-westward for 450 miles more, over sheep pastures and scrub to BOURKE on the Darling, where small steamers from the Murray arrive in the wet season.

**317. Towns on the Southern Railways.**—*Illawarra* district on the coast, 50 miles south of Sydney, is one of the loveliest and most fertile in Australia, and the great centre of dairy farming. WOLLONGONG, its chief town, is as famous for its butter as for the coal-seam worked by level tunnels driven into the sea cliff. The *Great Southern Railway* runs south 100 miles from Sydney to GOULBURN, the chief southern trade town, high on the mountain slope. A branch continuing southward passes Lake George, which is sometimes 20 miles long and 10 feet deep, at other times merely a flat, grassy meadow. The main line crosses the gap between the Blue Mountains and the Australian Alps, and runs for some hundreds of miles along the Murrumbidgee to HAY, which is a river-port in the wet season. Another crossing by a fine bridge at WAGGA-WAGGA reaches ALBURY on the Murray, 380 miles by rail from Sydney, and crosses to Wodonga on the Victoria side of the river. DENILIQUIN on a branch of the Murray, with a railway south to the Victorian town of Echuca on the main river, and WENTWORTH at the confluence of the Darling, where the lines of three colonies will soon meet, are growing important from their good positions for trade. KIANDRA, 4600 feet above the sea in the Australian Alps, is the coldest town in Australia, snow often lying for two months in winter.



**318.** **Lord Howe Island**, nearly 500 miles, and **Norfolk Island**, 1000 miles north-east of Sydney, stand on the same oceanic ridge as New Zealand, but they are politically part of New South Wales. Only 300 inhabitants occupy these islands.

#### VICTORIA.

**319. VICTORIA**, in the south-east corner, is the smallest colony on the continent, only  $\frac{1}{4}$  the size of the United Kingdom; but it has the largest population, and is therefore, of course, the most densely peopled. The Murray bounds it towards New South Wales on the north, and the meridian of  $141^{\circ}$  E. towards South Australia on the west. It includes the east and west running portion of the Great Dividing Range, the low western part of which is known as the **Grampians**, then come the **Pyrenees**, then the **Dividing Range** (which has given its name to the whole eastern mountain system of the continent), and finally, the southern part of the **Australian Alps**. The last named is the best wooded region, trenched with wonderful gullies, which are almost choked by a thick growth of tree-ferns, and above them the tallest trees in the world shoot straight up to a height of more than 400 feet. The narrow **southern plain** is watered by short and picturesque south running streams, the **Glenelg** in the south-west being the only one as much as 200 miles long. This plain is fertile on account of the large quantity of volcanic rock in the district. The steep cones of long extinct volcanoes diversify the mountains, and often hold deep, clear little lakes in their cold craters. They form picturesque mounds in the river valleys, which in Europe would have been crowned with ancient castles, and so have formed the beginnings of towns, but in this peaceful country they are left in solitude. On the **northern slope** of the mountains the rivers flow northward to the **Murray**. The **Ovens**, **Goulburn**, and **Campaspe** cross diversified pasture lands, and the **Loddon**, flowing north about the middle of the colony, is the last southern tributary which reaches the main river. The wide plains of the **Wimmera** district farther west are traversed by many streams from the

north slope of the Grampians, all of which dry up as they flow, or form salt lakes in a nearly rainless desert of scrub and barren sand.

**320. Resources.**—On both slopes of the mountains gold was found abundantly in 1851, just after the colony had been constituted, and a time of wild excitement followed, tens of thousands of eager gold-seekers, deserting their regular work, flocked to the diggings. Towns rose up in a single month, furnished with hotels, theatres, and newspapers. For years the miners picked up wealth from the old gravel beds on the surface, which had been worn off from the gold-bearing quartz rocks by the storms of thousands of years. After a while these were exhausted, and they had to mine deeper, breaking through sheets of hard basalt that had flowed from the old volcanoes and covered deeper gravel beds. Now these are nearly exhausted, and shafts have to be sunk, sometimes to a depth of 2000 feet, to reach the solid quartz reefs which must be quarried, the blocks crushed by expensive machinery, and the metal extracted by chemical methods. Thus, although gold is still the chief product of the colony, gold mining has become no more exciting than coal mining, and the gold-fields are as quiet and orderly as the sheep-runs. Iron-mines are also worked, and important industrial towns have sprung up, joined to each other by a network of railways, closer than in many parts of Europe. **Sheep-farming** is largely followed, but far less than in New South Wales. On the other hand much more **wheat** is grown, **maize** and the **vine** being also diligently cultivated.

**321. The Government** is like that of Queensland, and there is a small but serviceable colonial army and navy. Many Chinamen are to be found in the colony, although they are subjected to heavy fines and treated with scanty justice; but the aborigines have dwindled down to a few hundreds, and there will soon be none of them. Victoria is divided into thirty-seven counties, some in the north-west are too dry to have inhabitants, but as irrigation works are being formed, this state of matters will not long continue.

**322. Towns and Railways.**—**Melbourne** (with suburbs

390), on the little Yarra Yarra at the head of the great land-locked Port Phillip Bay, is the capital of Victoria, and the largest city of Australia. Splendid public buildings, built of dark blue Tasmanian stone, are ranged in wide straight streets served by cable tramways. There is a university, a fine museum, a mint coining gold, and a palace for the governor, with reception rooms worthy of a monarch. Beautiful parks and public gardens separate the city from the fashionable suburbs of ST. KILDA and BRIGHTON on the eastern shore of the bay. At WILLIAMSTOWN, on the west shore, the mail steamers from England land their passengers. GEELONG, 50 miles from Melbourne, at the south-west corner of the bay, is a manufacturing town with woollen factories.

The *Eastern Railway* runs through *Gippsland*, the south-eastern district at the foot of the Alps, where most of the cattle in the colony are pastured. The *North-eastern* crosses the Dividing Range and skirts the northern borders of the Alps, sending off many branches through agricultural and wine-growing districts, and meets the New South Wales line at WODONGA on the Murray, 190 miles by rail from Melbourne. A branch reaches BEECHWORTH, on the Ovens River, a gold-mining and agricultural centre. The *Northern Railway* crosses the Dividing Range farther west, and passes the mining towns of CASTLEMAINE and SANDHURST. The latter was famous in the days of the early diggers as *Bendigo*; it is the chief gold-mining centre, a flourishing manufacturing and wine-making town as well, and from its pure air and fine climate has become a great health resort. From each of these towns branches diverge to the west and north; and these are longer than the main line, which follows the Campaspe to the growing river-port ECHUCA (170 miles from Melbourne) on the Murray. BALLARAT, "the *Golden City*," next to Melbourne in size, and about 70 miles west of it, stands high on the south slope of the Dividing Range. Gold-mining is still carried on, although far less than formerly; but the rich soil of the neighbouring country grows the heaviest crops of grain and vines in the colony. The town has one of the finest public gardens in the world, which appears a very paradise contrasted with the noisy

quartz-stamping sheds and the smoky engine works which bring wealth to the community. The *Western Railway* runs on past the little mining towns of ARARAT and STAWELL, over desolate sand deserts, with salt marshes and plains of mallee scrub crossed by dwindling rivers, to SERVICETON on the frontier of South Australia, where the Eastern Railway of that colony meets it 300 miles from Melbourne.

### SOUTH AUSTRALIA.

**323. SOUTH AUSTRALIA**, founded in 1836 on the south coast, was originally a small settlement, but it is now entrusted with the government of the whole central slice of the continent from the borders of the three eastern colonies to long. 129° E., where it adjoins western Australia. This area is  $7\frac{1}{2}$  times that of the United Kingdom; most of it is barren desert, and a good deal has never yet been explored. The **Mount Lofty Range** of mountains runs from opposite Kangaroo Island along the east side of St. Vincent Gulf, its highest summit being about 3000 feet. A succession of hills along Spencer Gulf runs on to the **Flinders Range**, which stretches northward, bordering Lake Torrens, a former extension of the gulf. The great **Murray River** entering the colony from the east turns abruptly southward parallel to the Mount Lofty Range, and spreads out into the shallow fresh Lake Alexandrina, whence it escapes to the sea in a narrow tumultuous stream impassable to steamers. A breakwater is now being constructed to improve this entrance, and so open the river to trade from the sea. An extraordinary shingle ridge about 3 miles broad and nearly 200 feet high, called the *Corang*, has been formed by the current of the Murray along the coast eastward for 90 miles from the outlet of the lake. The shallow lagoon it encloses is about a mile wide and swarms with fish.

**324. Resources.**—Great deposits of fine copper ore in the Mount Lofty Range and on the coast of Spencer Gulf gave prosperity to the colony shortly after it was founded, just as gold did to Victoria. Although iron, lead, silver, and gold are also

found and worked to a slight extent, the wheat grown on the limestone soil of the southern coast-lands, wherever the rainfall is sufficient, is the chief resource, and the export to other colonies and to England is large, and increasing. Wine-making from the rich **vines** and oil-making from thriving plantations of **olives** are also important. The interior of the country is very dry, with little rain and no rivers. Large tanks have been established by Government at intervals along the great **stock roads**, which, as in the other colonies, are strips of land 1 mile wide, fenced with wire on both sides. Along these cattle and sheep may be driven and pastured as they go for hundreds of miles. Artificial oases formed round Artesian wells support farms hundreds of miles apart in the desert interior, and **camels**, of which about 2000 are in use, do the carrying between them and the railways.

The **government** is more democratic than that of the other colonies, as the people elect the members of both houses of their legislature.

**325. Towns.** — **Adelaide** (50), the capital, is a beautiful town built of dazzling white limestone in regular streets. It is divided into a northern and southern portion by an artificial lake on the little river Torrens, and entirely surrounded by a broad belt of finely laid-out park land that is never to be built on. The wealthy inhabitants have summer mansions on the cool wooded slopes of Mount Lofty. A perfectly straight railway runs north-west for 9 miles to the harbour, **PORT ADELAIDE**, at the mouth of the Torrens, on St. Vincent Gulf. The railways to the east lead to small river harbours and seaports near the Murray mouth, and crossing that broad stream at **MURRAY BRIDGE** run on to meet the Victoria lines about 150 miles from Adelaide. The *Northern Railway* passes through the copper-mining towns of **KAPUNDA** (with a branch westward to the mines and port of **WALLAROO**, on Spencer's Gulf) and **KOORINGA**, near the *Burra-Burra* mines, in the Mount Lofty Range. It reaches to **PORT AUGUSTA**, at the head of Spencer's Gulf, where crowds of reckless stock-riders (as the cattle-drivers are called) from the far interior are always carousing after their weeks or months of toilsome travelling through the deserts. **PORT PRINCE**, half-way up

the gulf, is one of the chief wheat-shipping ports in Australia, though there is no proper harbour. From Port Augusta the line strikes north between the Flinders Range and Lake Torrens to HERGOTT SPRINGS, near Lake Eyre, 450 miles from Adelaide. It is proposed to carry this railway right across the continent to the north coast.

**326.** The overland telegraph from Port Augusta already takes this route; its whole length of 1800 miles having been completed in 1872. Everything needed for the work and for the workmen had to be carried on oxen or camels through waterless deserts and weary stretches of scrub for hundreds of miles. Fortified houses are built at intervals of about 60 miles, where watchers, who are as lonely as lighthouse men, are stationed to protect the line and repair the damage done by storms or wandering "black fellows." In 25° N. the wire passes within 150 miles of the shallow salt lake Amédous, and then crosses a mountainous tract, the Macdonnell ranges, which reach a height of several thousand feet, just under the tropic of Capricorn. Then after more deserts come the green tropical forests, full rivers, and rich pasturage of Arnhem's land, where horses are reared for the Indian army, and the line terminates at PALMERSTON, on the harbour of Port Darwin.

●

#### WESTERN AUSTRALIA.

**327. WESTERN AUSTRALIA**, the largest colony, is 8 times the size of the United Kingdom, as it includes the whole land west of the meridian of 129° E., a full third of the continent. The coast mountains slope gently, and the greatest heights do not exceed 3000 feet; the rivers are unimportant, for although the rainfall on the coast is regular, scarcely any falls in the interior. Here there are hundreds of thousands of square miles of nothing but sandy desert, dense scrub, and unpassable spinifex wastes; and vast regions are still entirely unexplored. Along the coast, especially in the south-west, the climate is remarkably healthy, the hills are clothed with magnificent trees, such as the **karri**, the wood of which is almost as hard as iron, the **jarrah**,

which resists the attacks of all insects, and the fragrant **sandal-wood**. Flowers in a variety, such as is seen nowhere else, star the woods and plains, and stretches of fertile land, growing wheat, olives, vines, and mulberry trees occur here and there. The jet-black, red-beaked swan, which was found there, gave the name Swan River to the chief stream, which opens in 32° S., and *Swan River Settlement* was the original name of the colony. For twenty years after being founded there was little advance in population, and at the request of the inhabitants in 1850 convicts were regularly sent from Britain to supply labour, until in 1868 the British Government abolished transportation. Almost the whole population is concentrated in the south-west corner. **Sheep** are now the main resource, although mines of lead, copper, gold, and latterly of coal have been opened, and **pearl-shells** are largely exported.

The **government** is that of a representative colony, some members of the legislative assembly and the entire upper house or council being elected by the governor.

**328. Towns.**—**Perth** (8), the capital, on Swan River, its broad streets lined with flowering trees, is connected by rail with its seaport **FREMANTLE**, 12 miles west, at the mouth of the river. The island of Rottnest, opposite the estuary, has salt-works worked by natives, who are comparatively numerous in this colony. A good road which is traversed by mail coaches—until the railway now in progress is completed—connects Perth with the seaport of **ALBANY**, 260 miles to the south on King George's Sound, where there is a coal store for ocean steamers. A number of small timber-shipping seaports along the west coast have short railways running into the woods. At Shark's Bay a great pearl-shell fishery is carried on; but the risks are great, as severe storms are common, and more than once nearly the whole fleet at work has been destroyed. In the far north the hot *Kimberley* district contains great expanses of good grass, where cattle and horses are reared. A telegraph line carried along the arid desert, bordering the Australian Bight in the south, joins Perth and Albany to all the rest of Australia and to the outside world.

## TASMANIA.

**329.** The heart-shaped island of **TASMANIA** is connected with the south-east corner of Australia by a double chain of islets from its north-eastern and from its north-western promontories. The comparatively smooth north coast is broken by the long estuary of the **Tamar**; the west coast is a line of cliffs with one great inlet, **Macquarie Harbour**, about the middle, but the southern outcurve (reaching in South Cape to  $43\frac{1}{2}^{\circ}$  S.) and the east coast are split into a labyrinth of long inlets, ragged peninsulas, and rocky islands like western Scotland. The **surface** of the island also resembles Scotland in being an old high plain of ancient rocks worn by the short full rivers into innumerable deep and lovely glens. The tops of mountains left scattered irregularly over the land approach the height of 5000 feet. Beautiful lakes are found in the higher regions of the centre where the land is less worn down. Towards the east a valley more than 100 miles long (like the Great Glen of Scotland) joins the estuary of the Tamar in the north with that of the Derwent in the south. There are several coal and iron mines, but **tin**, **building stones**, and **slates** are the minerals most largely worked.

**330. Climate and Crops.**—The climate closely resembles that of England, although more windy, and is remarkably healthful. The “roaring forties” bring a great rainfall to the west coast, but all parts of the island are sufficiently watered for agriculture. Hot north winds sometimes blow from Australia in summer (October to March), but in winter snow is common on the higher ground where the rivers sometimes remain frozen for a few weeks. The island is thickly wooded with eucalyptus trees, and in the south the lofty **Huron pine** supplies good timber. Although all British farm plants grow well and are cultivated, **fruit** thrives best—apples, peaches, cherries, plums, strawberries, gooseberries, etc., coming to wonderful perfection. Jam-making is consequently a leading industry in the towns. There are great **hop** gardens and breweries, from which frozen beer is exported to Australia and India. In addition to the



common Australian animals there are two marsupial beasts of prey peculiar to the island—the beautiful *tiger-wolf* and the fierce little *Tasmanian devil*. Although these animals are now greatly reduced in numbers, they still do much damage to the sheep on outlying stations. The aborigines, who were apparently more ready to be civilised than the Australians, dwindled down to one old woman in 1873. She died a few years later, and the race is extinct.

**331. History and Government.**—The Dutch sea captain, Tasman, who first sighted the island in 1642, called it *Van Diemen's Land*, but it has since been named after himself. He supposed that it was part of Australia; and the name of Bass, who first sailed between the two, has been appropriately given to the dividing strait. Until 1825 Tasmania was part of New South Wales politically, and then it became a separate convict colony. Bushrangers were a terror to settlers for many years, but have long since ceased to give trouble. The colony, which is divided into eighteen counties, is now governed in the same manner as South Australia. A telegraph cable to Melbourne brings the lines of the island into contact with the world.

**332. Towns.**—Hobart (30), the capital, at the mouth of the Derwent on a grand harbour to the south, is valued as a cool summer resort by wealthy Australians. The main railway runs north for 130 miles through the long glen to LAUNCESTON on the Tamar, which stands picturesquely 40 miles from the north coast, but within reach of large vessels. A branch from near CAMPBELLTOWN, in the middle of the long glen, leads eastward up the South Esk beneath Ben Lomond to the coal-mines of FINGALL, in the county of Cornwall. These names, like most in the colony, are taken from Britain, and often keep in mind the birthplace or early surroundings of the first settlers. Another branch westward through WESTBURY to DELORAINE curves northward down the Mersey to the little port of FORMBY. Gold deposits have brought a rapid increase of population to BEACONSFIELD, near the mouth of the Tamar estuary. The very rich tin-mines worked at MOUNT BISCHOFF, in the north-west, made it necessary to construct a special railway, 50 miles long, to Emu Bay.



FIG. 16.—A FERN FOREST IN NEW ZEALAND

## CHAPTER XV

### ISLANDS OF THE PACIFIC OCEAN

#### NEW ZEALAND.

333. The two large islands of **NEW ZEALAND** were named after his native land by Tasman, who discovered them in 1642. They extend parallel to the coast of Australia, 1200 miles distant to the south-east, reaching from  $31^{\circ}$  to  $47^{\circ}$  S. lat., and from  $166^{\circ}$  to  $179^{\circ}$  E. long. Their shape is like that of Italy reversed and torn in three. **North Island** represents the tattered foot of a top boot, **South Island** the leg, and **Stewart Island** the torn loop. The total area is a little less than that of the United Kingdom, but **North Island** and **South Island**, separated by the narrow and shallow **Cook Strait**, are each about 500 miles long. They are both mountainous, partly volcanic, and subject to earthquakes. There is fertile soil in the

valleys. The climate is windy and boisterous, with a heavy rainfall along the west coast. It is warm, but not unpleasantly hot in North Island, cool and often chilly in the south.

**334. Plants and Animals.**—Thick forests clothe the wet western mountain slopes, but all the plants are different from those of Australia. No eucalyptus or acacia trees grow naturally, though they flourish when planted, and there are few bright flowers. The stately **Kauri pine** of the north supplies the finest timber; the gum which oozes from it, and is dug up in a fossil state, resembles amber, and is largely exported for jewellery and making varnish. **Native flax**, with bright green sword-shaped leaves, yields a strong fibre for rope-making. **Ferns**, from little mossy tufts to great tree-ferns with fronds 20 feet long, are the most characteristic of the plants. They not only fill the valleys, as in Australia, but cover hundreds of square miles of plain country instead of grass. When the fern is burned off the land wheat and other crops grow well. There are no native mammals; but pigs, introduced by Captain Cook a century ago, and rabbits brought by British settlers, have run wild and become a pest. The *kivi* or apteryx is a bird about the size of a common fowl, but with neither wings nor tail, and a kind of hair instead of feathers. Skeletons have also been found of the giant *moa*, a bird far larger than the ostrich. The common house-fly was imported accidentally, and is a plague in summer; but bees, which were also taken from England, are abundant and much valued as honey-makers in some places.

**335. People and Government.**—The original people, or **Maories**, are rapidly dying out, though about 40,000 still live in North Island. They are a tall, handsome race of the Yellow type, who originally came from the Polynesian Islands and had made some progress in civilisation, building forts, making tools and canoes ornamented by beautiful carvings. They treated their women well, and were born poets and orators. It is interesting to notice that native names have been kept for far more places in New Zealand than in Australia. Since missionaries and settlers came many Maories have become educated, and some are members of the New Zealand parliament. But unfor-

unately most of them have become far lazier and more degraded since they have been able to get strong drink. **Colonists** from New South Wales settled in 1810 in several provinces, of which there were ultimately nine, each with a separate government; but a central government, like that of Queensland, has now superseded these. **Gold** was discovered in South Island in 1852, and crowds of miners flocked to the country; but **iron**, **coal**, **silver**, and **copper** are also worked, and **wool**, **wheat**, and **frozen meat** have become articles of extensive export.

**336. North Island.**—The west coast of North Island (like the upper of the boot) is comparatively smooth, the extreme points being Cape Maria Van Diemen, and North Cape; but the north-eastern side is much cut up, **Hauraki Gulf**, full of picturesque islands, lying opposite the only two indentations of the western side. The **Bay of Plenty**, also dotted with islands, corresponds to the Gulf of Taranto in Italy; **Hawke Bay**, on the south-east, is the only other important inlet. The rocks of this island are nearly all of volcanic origin. A central high plain culminates in the extinct **Ruapehu** (over 9000 feet), and the active volcano **Tongariro**. From this centre a ridge of mountainous land runs north-eastward into the heel of the boot; and another southward to Cook Strait, flanked by a long parallel range on the east. The great central **Lake Taupo** far above the sea, but towered over by cliffs 2000 feet in height, is traversed by the largest river of the island, the **Waikato**, flowing north through a winding and thickly wooded valley for 100 miles, and then turning abruptly westward to the sea. **Lake Rotorua** and **Lake Terawera**, midway between Lake Taupo and the Bay of Plenty, are in the midst of a region full of boiling springs and geysers. This district is specially reserved to the Maories, who cook their food in the natural hot water. Two remarkable groups of terraces formed by the deposit of silica, one flashing white, the other a delicate pink colour, contrasting with pools of deep blue water, used to be visited by hundreds of tourists from all parts of the world, and active hotels had sprung up in the neighbouring villages. But in 1886 an earth-

quake, followed by eruptions of boiling mud, shook these terraces to pieces and buried them for ever.

**337. Towns of North Island.**—The provincial district of *Auckland* fills the whole north of the island. **AUCKLAND** (60), at the head of the Hauraki Gulf on the east coast, is the largest town of New Zealand, with fine stone buildings, and a great artificial harbour. **ONEHUNGA**, 6 miles west by rail, stands on the wide west coast harbour of Manukau, and it is because the entrance to this harbour is blocked by a bar that the chief town has grown up on the coast farthest from Australia. A railway follows the bed of the Waikato River southward, joining a series of agricultural villages, and branching eastward to the Thames valley, where it reaches **SHORTLAND** and **GRAHAMSTOWN**, near active gold-mines. The provincial district of *Wellington* extends from the highest part of the island southward. **WELLINGTON** (30), at the narrowest part of Cook Strait, was made the capital on account of its central position; but the town is entirely built of wood, since earthquakes are so common that stone houses would be shaken to pieces. There is a telegraph cable from Cook Strait connecting the New Zealand lines to Sydney and the rest of the world. The railway to Auckland over the central heights is not yet completed, but a line runs north-east up the wide valley between the parallel north and south ranges for 160 miles to **NAPIER** in the rich wheat-growing and sheep-farming district of *Hawke Bay* province, which skirts the bay of that name. Another line goes to **NEW PLYMOUTH**, equally distant to the north-west, at the base of the stately snow-clad volcanic cone of **Mount Egmont** in the south-western province of *Taranaki*, which is famous for the heavy black sand of fine iron ore that forms its beach.

**338. South Island** is fretted into deep bays and fantastic peninsulas on its short north coast. The east coast is a smooth stretch of sand marked into three nearly equal divisions by the basalt hills of Banks' peninsula and Cape Saunders, both of which shelter harbours. The storm-beaten south coast is separated by Foveaux Strait from *Stewart Island*. The south end of the west coast resembles the south end of the west coast of

Norway, being formed by lofty cliffs cut into long branching fjords of romantic beauty. Their valleys, waving with pine and fern, run up among snow-capped mountains, from which the shrunk remnants of the glaciers that ground them out in colder days of old, still creep down and melt into rapid torrents. North of 44° S. the coast is again smooth and nearly harbourless. Most of the rocks of South Island are of old sedimentary formation, containing good coal and abundance of gold in their quartz veins and old gravel.

The **Southern Alps**, rising close to the west coast, form a uniform lofty chain which stops all communication across the middle of the island. **Mount Cook** (12,500 feet), a magnificent snowy peak, rises in the centre. The steep western slope is occupied by the province of *Westland*, the gentle eastward declivity, broken by a broad terrace sinking in hills to a still wider plain, forms the province of *Canterbury*. Towards the north the Southern Alps subdivide into numerous lower parallel ranges; the north-west covered by the large province of *Nelson*, the north-east by the smaller *Marlborough*. Southward the chain, though lower, forms a much-broken high plain, ridged by irregular hills and valleys filled with deep glacial lakes of unsurpassed beauty. Narrow winding **Lake Wakatipua**, more than 50 miles long, with the smaller **Lakes Wanaka** and **Hawea**, give rise to the Clutha, the longest river, which flows south-eastward through beautiful valley scenery to the sea. **Lakes Te Anau** and **Manipouri**, farther south, are scarcely less imposing. *Otago* province covers the whole south of the island, being separated from *Canterbury* by the **Waitaki**, flowing east from a series of small lakes high up in the Southern Alps.

**339. Towns of South Island.**- **NELSON**, on Blind Bay, in the north, has a short railway running inland, succeeded by a coach road through wild scenery to the isolated towns of **WESTPORT** and **GREYMOUTH** on the west coast. Both of these towns ship coals brought down by short railways from level tunnels, or open quarries in the hillside. The Greymouth line runs 30 miles south to **HOKITIKA**, almost the only town in *Westland*, where the rocks are so rich in gold that after a storm

nuggets may be picked up amongst the shingle on the shore. **BLenheim**, and the good harbour of **Picton**, linked by rail, are the only towns of richly wooded *Marlborough*. **LYTTLETON**, on an inlet of the rocky Banks' peninsula, is the port of Christchurch, 8 miles to the north-west, to reach which by railway a 2-mile tunnel had to be bored through solid rock. **CHRISTCHURCH**, on the English-looking Plains of Canterbury, is a fine town with a college and museum, and railways branch to all the little farming villages of the neighbourhood. The main line along the coast, passing the little port of **TIMARU**, and of **OAMARU** in *Otago*, reaches **PORT CHALMERS**, on Otago harbour, just north of Cape Saunders, and **DUNEDIN** (40), at the head of the same inlet, more than 200 miles from Christchurch. In consequence of the discovery of gold, Dunedin has become the chief commercial town of the colony, and has been well provided with beautiful parks and gardens. The railway strikes inland through more varied scenery for 150 miles to **INVERCARGILL**, at the southern extremity of the island, whence a branch runs up the valley of the Oreti, 100 miles to **KINGSTON**, at the east end of Lake Wakatipu, whence steamers ply to **QUEENSTOWN** amidst the finest scenery of the lake.

**340.** The **Auckland Islands**, far to the south-west of Stewart's Island, **Kermadec Islands**, far to the north-east of North Cape, and **Chatham Island**, east of Cook's Strait, are all British possessions, occasionally visited by whalers, and on many of the barren and uninhabited islets stores of food are kept in case of vessels being wrecked upon them.

**341.** The small islands of the Pacific have been classed into three groups according to the race of men inhabiting them. All the people are alike in one thing: as soon as they meet white men they grow demoralised with drink, their battles become far more murderous than of old by using firearms; and they are killed off in thousands by new diseases, some of which are not very dangerous to Europeans; measles, for instance, is common and fatal to both young and old. A treaty, signed by all the great European maritime powers, absolutely prohibits the sale of spirits or firearms to Pacific Islanders, but traders and

natives combine to smuggle them in. The only quadruped on the islands is the rat, but pigs landed by Captain Cook now run wild almost everywhere. Even the narrowest reefs are plumed with the sea-loving coco-nut palm, while bread-fruit and banana trees also supply food.

#### MIKRONESIA.

**342. Mikronesia** (*i.e. small islands*) is the name given to a number of groups of very small volcanic and coral islands lying east of the Philippine Islands and all north of the equator, peopled by tribes related to the Malays, but quite savage. The *Pelew Islands* and the *Ladrones* or Robber Islands form short north and south chains, the *Carolines* crown a long bank running east by south from the Pelews, and all three groups belong politically to Spain. The thinly peopled *Marshall Islands*, east of the Carolines, belong to Germany and are continued southward by the small *Gilbert Group* of little atolls, which swarm with inhabitants, the density of population in some of the islands being 400 to the square mile.

#### MELANESIA.

**343. Melanesia** (*i.e. islands of the Blacks*) includes New Guinea (§ 279) and adjacent groups, the inhabitants resembling the frizzly-headed people of that great island. They are a small, very dark race, fierce and brutal; they build large canoes, are armed with bows and arrows, and know how to make pottery. Those who are not converted to Christianity are inveterate cannibals, and make their women do all the hard work.

**344. The Solomon Islands**, running south east for 700 miles from the Bismarck archipelago (§ 279), are German possessions. The people are so savage and vindictive in consequence of ill-treatment by sandal-wood traders and “*sk-birders*” that little exploration has been done in the islands, which are made up of volcanic rocks and coral reefs raised far above the sea.

**345. The New Hebrides**, an equally long group of smaller islands, 400 miles farther to the south-east, also stand on the same ocean rise as New Guinea. These islands, clothed with



ferns and coco-nut palms, are occupied by the French. Many natives had been Christianised long before by English missionaries, one of the most courageous and devoted of whom, John Williams, was killed by the savages at *Erromango*. No islands have suffered more than the New Hebrides by the reckless action of the "black-birding" schooners seeking labourers for Queensland plantations, and carrying away the natives by force. The little *Loyalty Group* lies to the west of the New Hebrides. \*

**346. NEW CALEDONIA** is a big island, 250 miles long, and about 30 miles wide, lying 700 miles east of Queensland. The island is mountainous and is fringed by a coral reef. It is inhabited by a brave and powerful race of cannibals; but the French made it a convict settlement, the degraded white population being guarded by soldiers and kept at work on the sugar and coffee plantations or in the mines of nickel, a metal which occurs nowhere else so abundantly. *Noumea* (10), the capital, on the south-west coast, has regular steamer communication with Australia and France.

**347. The FIJI ISLANDS**, about 200 in number, are clustered round the 180th meridian -- so that at noon in Britain it is midnight -- and near lat. 18° S., about 2000 miles east of Queensland. This being the region of the south-east trade winds, the larger and more hilly islands have an abundant rainfall on their eastern slopes which, in consequence, are thickly clothed with forests, while the dry western side is open grass-land with clumps of trees. The *Fijians* are by far the most intelligent and now the most civilised of the Melanesians. Their king, *Thakombau*, ceded the government to the United Kingdom in 1874, and the islands now form a Crown colony; but most of the government officials are native chiefs, who rule their tribes according to old customs. The *coco-nut* palm, besides giving food, drink, dishes, clothing material, fuel and timber to the natives, supplies the leading export. This consists of the dried kernel called *copra*, from which an oil for soap-making is prepared. *Sugar* and *cotton* are cultivated by coolies brought from India, and *kanakas* or natives of the other Melanesian islands.

The largest island is *Viti Levu*, where the little capital *Suba* stands half hidden in palms on the shore of a fine harbour protected by coral reefs. *LEVUKA*, on a small island to the east, is the next town in importance; and *Vanua Levu*, to the north-east, the second large island, is occupied by native villages.

## POLYNESIA.

**348.** All the remaining Pacific Islands are classed together as **Polynesia** (*i.e. many islands*). Their natives, though differing in different groups are as a rule tall, of a light copper colour, and extremely handsome; they often tattoo themselves in graceful patterns. They have no written language, do not use metals nor make pottery, and have no bow and arrow; but, until corrupted by Europeans, they were a healthy and light-hearted people, brave in war, but gentle in time of peace. They were extremely cleanly in their persons and houses, decking themselves with tasteful garlands of flowers, and decorating their canoes and cottages with beautiful carvings. They were polite and ceremonious to each other, and very respectful to their women, who were only allowed to do the lightest and easiest work. Now their numbers are rapidly diminishing from drink and disease; although Christianity has taken a firm hold in many of the islands, the white traders do more harm than the missionaries can do good.

**349.** The **Tonga or Friendly Islands** lie close to Fiji, and the little **Samoa Group**, farther north, under the protection of the United States and Germany, has two important harbours, **APIA** and **PANGA-PANGA**, where the steamers between Auckland and San Francisco call. The **Society Islands**, **Low Archipelago**, and **Marquesas**, midway between Queensland and Peru, are under French control.

**350.** **TAHITI**, in the Society Islands, rising into two grand volcanic mountains, with wooded valleys and great deep gorges, is entirely surrounded by a fringing reef of coral. The active, graceful people are still nominally governed by a native Christian queen, but while the French ensure her every mark of respect from other nations, they compel her to rule according to their advice. **Papeete**, on a remarkably fine harbour in the north-

west, is the capital and the chief trade centre for the surrounding archipelagoes.

351. The islet of **Pitcairn**, at the south-east of the Low Archipelago, was peopled by the descendants of the sailors of H.M.S. *Bounty*, who mutinied in 1790 and settled there, marrying Tahitian wives. They were all removed to Norfolk Island by the British Government in 1856, to be nearer the civilised world, but many returned and still live in their old home, which "is a paradise of palms and fruits. **Easter Island**, farther east, and only 2000 miles from the coast of Chile, although peopled by Polynesians who never build in stone, is full of wonderful ruins of houses and walls. Great rough statues, hewn out of masses of rock brought from long distances, are also found. These must be the work of some mysterious early inhabitants, every other trace of whom is lost.

352. The **Sandwich Islands**, or kingdom of **HAWAII**, close to the tropic of Cancer, 4000 miles from Auckland, and 2000 miles from San Francisco, are in the line of the regular mail steamers. *Hawaii*, the largest and most southern island, gives its name to the kingdom, the others of importance being *Mauī*, *Oahu*, and *Kauai*. Hawaii has been a limited monarchy for fifty years, the parliament consists of two houses—Nobles and Representatives,—both elected by the people, who are Christian Polynesians. The native population of the group was about 200,000 a century ago, but is now less than 40,000, and is decreasing.

The lovely island of **Hawaii** is encircled with a beach of snowy sand beaten by perpetual surf. Here Captain Cook was killed in 1778. The lower slopes of the island are covered with waving palms and trim plantations, and, above all, there are two huge active volcanoes, *Manna Kea* and *Mauna Loa*, more than 13,000 feet high. Amidst all the grand scenery of the rugged interior, that of the crater of **Kilauea** is the most sublime. It is a lake of molten lava about 3 miles in diameter, rolling in waves of fire. **Sugar** plantations are largely worked, and the usual tropical plants grow luxuriantly on the east side of the islands, which receive the rains of the north-east trade winds.

Honolulu (20), the capital and largest town, on a crowded harbour in the island of *Oahu*, is an active centre of trade with America. Here the telephone is probably more widely used between private houses than in any other town in the world, the wires looking like spider webs stretched among the palm trees that line the streets.

STATISTICS OF THE COUNTRIES OF AUSTRALASIA, ETC.,  
ABOUT 1886

Country	Government	Area in thousands square miles	Population		In million pounds		Time at Capital *
			Milers	Per square mile	Exports	Imports	
Queensland	Responsible colony	668	0 4	0 5	5	4	10 12 P M
New S. Wales	"	310	1	3	15 5	21	10 5 "
Victoria	"	88	1	11 7	12	14	9 40 "
S. Australia	"	903	0 3	0 3	4 5	5	9 14 "
W. Australia	Responsible colony	674	0 04	0 0	0 5	0 7	7 43 "
Tasmania	Responsible colony	26	0 14	5	1 7	1 7	9 49 "
New Zealand	"	104	0 1	7 5	6 5	6	11 98 "
New Caledonia	French colony	5	0 06	7			11 6 "
Fiji	French colony	5	0 13	16	0	0 3	11 50 "
Tahiti	French colony	0 1	0 01	23			2 2 A M
Hawaii	United States	7	0 1	12	2	1	1 28 "

At Greenwich noon



FIG. 17.—A PRAIRIE FIRE

## CHAPTER XVI

### THE CONTINENT OF NORTH AMERICA

**353. Position and Outline.**—The continent of North America, between the Pacific and Atlantic Oceans, runs through the whole length of the north temperate zone, and stretches northward far within the arctic circle as a labyrinth of dreary peninsulas and islands, so firmly locked together by the frozen sea that no one is very sure how much is land and how much water. On the south the continent runs far within the tropics, and is joined to South America by the narrowing series of isthmuses known as Central America. It is worth remembering that the greater part of North America lies to the west of the meridian,  $80^{\circ}$  W., and that almost the whole of South America is east of that line. The meridian of  $100^{\circ}$  W. runs nearly along the centre of the continent for a distance of 4000 miles, from Parry Islands in the Arctic Sea on the north to the Pacific Ocean near the isthmus of Tehuantepec on the south. The continent gradually increases in width from the north to the parallel of  $52^{\circ}$  N. (the latitude of the south of England), which crosses it from the Pacific to York Point in Labrador, a distance of 3000

miles. Southward of this parallel the east and west coasts approach each other gradually, until at the parallel of  $30^{\circ}$  N. it is about 2000 miles wide; and then it narrows so rapidly that at Tehuantepec, in  $18^{\circ}$  N., the width is only 150 miles.

**354. Atlantic Coast.**—In the extreme north-east the great arctic island of **Baffin Land** is separated from Greenland by a channel about 300 miles across, known as **Baffin Bay** and **Davis Strait**.

The Atlantic coast of the mainland begins in  $60^{\circ}$  N., south of **Hudson Strait**, which separates **Baffin Land**, and leads westward to the great ice-blocked sea of **Hudson Bay**. The bleak cliffs of **Labrador**, which are broken by many bays and battered by fleets of icebergs, carried all summer by the arctic current, terminate in **York Point** in long.  $56^{\circ}$  W., the most easterly part of **North America**. Here the **Gulf of St. Lawrence** begins, its wide mouth being blocked by the island of **Newfoundland**, which is separated from **Labrador** by the narrow strait of **Belle Isle**. The island of **Anticosti** lies in the middle of the estuary of the **St. Lawrence**, which opens into the gulf. **Prince Edward Island** lies close to the southern shore of the gulf, protected from the sea by **Cape Breton Island**, a prolongation of the hammer-headed peninsula of **Nova Scotia**. From the Bay of **Fundy**, enclosed by the southern half of this peninsula, the coast runs south-westward for 400 miles in a line of cliffs where there are many good harbours, to a small sickle-shaped peninsula ending in **Cape Cod**. For 200 miles a stretch of similar coast runs nearly westward, reaching **Long Island**, which is separated by a narrow sound from the mainland. Here the character of the shore changes, and its direction once more becomes southerly. The land is low and sandy, the sea stretches inland in the two wide bays or estuaries of **Delaware** and **Chesapeake**; and in lat.  $35^{\circ}$  N., 600 miles from **Cape Cod**, the outer curve of an elbow-shaped sand-bar is known as **Cape Hatteras**. A shallow incurve of swampy coast, bordered by lagoons and mud-banks, sweeps southward to **Cape Sable** (i.e. *Sandy Cape*) at the extremity of the low-lying coral-fringed peninsula of **Florida**, whence a wide oval sweep surrounds

the Gulf of Mexico. The whole gulf coast is low and swampy. It is bordered near the river-mouths by long forest-clad bars of mud, and elsewhere by coral reefs, which shut in a lacework of shallow hot lagoons against the shore. There is no uniform stretch of low coastline so long as this in any other part of the world. In the middle of the northern curve of the gulf coast, at long.  $90^{\circ}$  W., the end of the **Mississippi delta** stretches 100 miles into the water like a giant arm, and spreads out into a number of finger-like mud-banks, at the end of each of which one of the great branches of the river shoots its muddy brown water across the deep blue of the gulf.

**355.** The Western or **Pacific Coast** approaches Eurasia at Bering Strait close to the arctic circle. Here Cape Prince of Wales is the most westerly part of America, reaching nearly to  $170^{\circ}$  W. The shore, which is icebound most of the year, forms a succession of wide bays and capes southward to lat.  $60^{\circ}$  N., where the long tapering peninsula of Alaska runs southwest and is continued westward in the chain of little **Aleutian Islands**, almost to the shore of Kamchatka. A wide incurve then sweeps south-eastward for 1500 miles, bordered by an archipelago of mountainous islands, separated from the mainland by narrow channels which sometimes run far in among the mountains as fjords. This characteristic scenery, which closely resembles the west of Norway, and still more the southern part of the west coast of South America, ends abruptly at  $49^{\circ}$  N. in the large island of **Vancouver**. From the mouth of the Columbia River, a little farther south, extends a long cliffy outcurve, hardly broken by a harbour or river. **Cape Mendocino**, nearly in lat.  $40^{\circ}$  N., is its most westerly point. But 200 miles south of this cape there is a sudden remarkable gap in the mountain wall, called the **Golden Gate**, leading to a great branching bay which receives the Sacramento and Joaquin Rivers. From lat.  $30^{\circ}$  N. to just within the tropic of Cancer, the coastline is again of the same rocky unbroken character, but the narrow and uniform **Gulf of California**, 800 miles in length, runs northward into it, separating the long narrow peninsula of Lower California, which ends in Cape St. Lucas. The Colorado

River enters the head of this gulf. From the mouth of this river the coastline continues south-eastward to the isthmus of Tehuantepec, which may be taken as the southern limit of North America.

**356. Western High Lands.**—The configuration and water system of North America are simple, but in some ways unlike those of any other continent. The most important feature is a vast high plain, which fills the whole western half of the continent. The eastern half of this high plain slopes gently down in terraces and broad undulating plains nearly undisturbed by hills; but a great range of jagged snowy peaks—the **Rocky Mountains**—runs straight from Alaska to Tehuantepec, about 100 miles distant from the Pacific coast, except where the great outcurve of that coast increases the distance to nearly 1000 miles. This is the eastern buttress range of a high plateau more than a mile above the sea, from which many smaller ranges rise. Close to the Pacific the western slope is made precipitous in many places by a line of mountains known as the **Cascade Mountains** in the north, the **Sierra Nevada** and **Coast Range** in the region of the great outcurve, and the **Sierra Madre** in the south. Each end of this mountain system contains active volcanoes, and the highest peaks are near the extremities, **Mount St. Elias**, in lat  $60^{\circ}$  N., being the culminating point of the continent, 19,500 feet; **Popocatepetal** and **Orizaba**, where the **Sierra Madre** and **Rocky Mountains** converge at  $19^{\circ}$  N., come next in height. Between the **Wahsatch Mountains**, a range west of the **Rocky Mountains**, and the **Sierra Nevada**, in the widest part of the high plain, there is a region of internal drainage called the **Great Basin**; it contains **Great Salt Lake** and other saline and bitter lakes, into which rivers flow, but from which, owing to evaporation, there is now no outlet. The line of the **Rocky Mountains** forms the main watershed of the continent. The chief rivers of the western slope are the **Yukon** in the far north, pouring into **Bering Sea**; the **Columbia** in the centre, north of the **Great Basin**; and the **Colorado**, south of that high depression. All these are true plateau rivers flowing through deep cañons or gorges cut in large



measure out of horizontal layers of rock. Hard granite masses occur along the line of the mountain chains, while thick sheets of lava have spread over many of the valleys and plains. Otherwise this whole region is composed of sedimentary rocks of vast thickness. In the veins of quartz are great stores of gold and silver.

**357. Eastern Low Lands.**—The steeply sloping plains east of the Rocky Mountains are very narrow in the extreme north, but hundreds of miles wide towards the south, where they slope eastward, and are known as the *Great Plains* when their elevation is over half a mile, and as they sink by imperceptible degrees to a lower level, they are called *Prairies*. North of  $50^{\circ}$  the land is inclined slightly northward as well as eastward, and south of  $50^{\circ}$  it slopes gently southward, forming a central low plain. A broad swelling or ridge, nowhere more than 2000 feet above the sea, thus runs right across the continent at its widest part. It is not sharp enough to be called a mountain range, but its northern edge is known as the **Height of Land**, and its southern as the **Great Divide**.

**358. St. Lawrence Basin.**—Along the centre of the eastern half of this swelling or ridge there is a series of great lakes. The three westernmost lakes form a group resembling a flying bird. The left or western wing is **Lake Superior**, the largest gathering of fresh water in the world; it runs west and east. The right or eastern wing is **Lake Huron**, running from north-west to south-east, and the body or central lake is **Lake Michigan**, running from north to south. These lakes receive only short rivers. From the south-eastern end of Lake Huron a short and rapid river flows southward into **Lake Erie**, which extends south-west and north-east. From its north-east end a broad swift river glides northward, whose name **Niagara** (*i.e. the thunder of the waters*) is well earned by the roar of the magnificent falls which form part of its path to Lake Ontario. These falls, although not very high, are the most impressive in the world, more than a million tons of water pouring every minute over the edge of a broad curved precipice, 160 feet in height. From the north-east end of **Lake Ontario** the wide

and deep **St. Lawrence** River flows north-eastward, gradually widening until it enters the gulf of the same name. The rim of higher land which encircles the whole river system, is raised only a little above the level of the plains which slope from it to north and south. The northern Height of Land, however, rises on the east into a confused series of low hill ranges running into Labrador, and known as the **Laurentides**.

**359. Arctic Basins.**—A line of smaller, but yet large lakes, shallower in depth and irregular in form, runs northward from Lake Superior, parallel to the Rocky Mountains, as far as the arctic circle. Along their whole length they divide the fertile prairies which rise gently westward to the Rocky Mountains, from the barren, low-lying plains sloping eastward to Hudson Bay. These lakes form parts of two distinct river systems. The **Saskatchewan** pours east from the Rocky Mountains in two equal streams which unite and enter Lake **Winnipeg** after a course of more than 1000 miles. Thence it flows northward as the **Nelson** and enters Hudson Bay. North of this system the great **Mackenzie River** flows north-west, draining many of the lakes, Lake **Athabasca**, **Great Slave Lake**, and the **Great Bear Lake** being the chief, and enters the Arctic Sea by a wide delta in lat. 70° N.

**360. Eastern Mountains and Rivers.**—The Great Divide spreads out in the east into mountain ranges called collectively the **Appalachians**. They run southward parallel to the east coast, and are formed of the same kind of rocks as the **Laurentides**, much more ancient than those of the western high plains. They have been wrinkled into innumerable longitudinal valleys, the heights separating which have been worn down so that no summits rise above 7000 feet, and cut by cross valleys into separate mountain blocks. Thick seams of coal are exposed to view in the valleys; iron ore is abundant, as well as many other useful metals; petroleum and natural gas are found plentifully by boring in the western slopes, so that the region of the **Appalachians** is well suited by nature to be part of a great industrial country. The eastern slope is comparatively short, and is traversed by many rivers which are only a few hundred miles in length,

but of great political and commercial importance. They have geological importance too, for they are all at work extending the low muddy coast farther out to sea with the materials brought down from the mountains.

**361. Mississippi Basin.**—The western slope of the Appalachians forms part of the basin of the longest, though not the largest river system in the world, that of the **Missouri** and **Mississippi**, which drain the whole central low plain south of the Great Divide. The Mississippi rising on the Height of Land in  $48^{\circ}$  N., a little to the west of Lake Superior, flows southward over the low plain, crossing and recrossing the meridian of  $90^{\circ}$  W., as it winds on its way in a few wide curves and an infinite number of small meanderings. At  $39^{\circ}$  N., after flowing about 2000 miles, it receives its first great tributary on the right, the **Missouri**, 3000 miles long, flowing straight from the Rocky Mountains and swelled by many smaller streams, including the **Yellowstone**, the **Platte**, and the **Kansas** which rise farther south along the same great mountain chain. A hundred miles farther south the **Ohio**, 1000 miles long, joins the Mississippi on the left, bringing down nearly the whole drainage of the western Appalachians, its longest tributary being the circuitous **Tennessee**. At  $34^{\circ}$  the **Arkansas**, 2000 miles long, enters on the right from the Rocky Mountains. About this point the great river begins to embank its bed above the neighbouring low marshy lands, while a braiding of cut-off river loops and stagnant lagoons extends on each side toward the vast delta.

The **Rio Grande del Norte** (*i.e.* *Great River of the North*, a name given by the Spaniards who lived south of it) flows eastward into the Gulf of Mexico from the southern end of the Rocky Mountains.

**362. Climate.**—The climate of North America varies from arctic cold in the north to semi-tropical heat in the south, but it is more severe than that of the old world in the same range of latitude. The winters in the north are long and severe, snow lying deeply for many months, and the short hot summer comes at a bound, so that there is scarcely any spring-time. The east coast in the north being washed by the cold Labrador current

is far colder, and the east coast in the south, being in the path of the Gulf Stream, is rather warmer than the latitude would lead one to expect. The extreme north-west coast and the Alaska peninsula are warmed by the Kuro Siwo, the gulf stream of the Pacific. Excepting the coast the whole western half of the continent is, however, cooler than the eastern half, on account of its much greater elevation. As the mountain ranges run north and south, bitter winds from the north often sweep over the entire continent even to the borders of the sub-tropical Gulf of Mexico. **Tornadoes**, akin to the hurricanes of the West Indies and the typhoons on the China Sea, sweep over many districts in the centre of the continent, ploughing a straight path of destruction through towns and forests.

**363. Rainfall and Plants.**— Rainfall is heaviest on the warm gulf coast in the south, and vegetation of a sub-tropical kind is luxuriant there. The peninsula of *Florida* got its Spanish name from the beautiful flowers with which its woods are brightened. The whole eastern half of the continent has a moderate and steady supply of rain, rather greater on the average than that of England. But on the high plains west of 100° W. little rain falls, and there are vast desert tracts, including part of the Great Basin, where farming of any kind is consequently quite impossible. On the Pacific coast the rainfall is, as a rule, abundant, but it varies with the season. In the extreme south it is greatest in summer; along the central outcurve, in autumn and winter; while farther north on the island-bordered incurve there are showers all the year round; and the moist climate there has produced a great growth of trees. The north-eastern river basins are thickly wooded with **pin**es, and with forests of **birch**, **oak**, and **maple**, the colours of which in the brief autumn, before the leaves fall, are indescribably brilliant. The great plains and prairies sloping eastward from the Rocky Mountains were formerly treeless, wavy expanses of **grass**, which were often devastated by vast prairie fires that destroyed the vegetation, burnt the animals, and even swept away whole villages as the flames spread before the wind. But they are now cultivated in many places, and are gradually being planted with trees.

The chief native plants which are cultivated, are **tobacco** in the south-east, and **maize** over most of the continent in latitudes lower than  $40^{\circ}$  on the west coast and  $45^{\circ}$  on the east. All the European food-plants are, however, introduced and grow well.

**364. Animals.**—The animals characteristic of the continent are the **seal** along the shores, the **beaver** in the northern rivers, the shaggy **muskrat** in the snow of the far north, the companion and prey of the **polar bear**, the brown and grizzly bears in the mountains, the **puma** or American lion in the forests, **deer** of many kinds, and **opossums**. The fierce shaggy **bisons** (wrongly called *buffaloes*), that used to roam over the prairies in countless herds, have now been almost hunted to extinction. On little mounds of soil thrown up in groups mile after mile over the plains, the little burrowing rabbit-like **prairie-dog** may be seen sitting on its hind legs watching the train or traveller that passes by. The **turkey** is a native of North America, and so are many brilliant humming-birds. The **rattlesnake** is one of the commonest and most dreaded of the reptiles.

**365. Red Indians.**—The original people of North America belong to the Yellow type, but have a reddish-brown complexion, and are commonly known as *Red Indians*, on account of the mistake Columbus made when he discovered America and supposed he had reached India. They form many tribes usually called after some animal or natural object, and they speak many different languages. Some of these tribes, especially those on the high plains of the south, were highly civilised when first visited by Europeans. Although all the Indians north of Mexico, when in their free natural condition, live in tents or *wigwams* and support themselves by hunting, remains of ancient cliff-houses in some places show that more civilised people once dwelt there. The Indians use bows and arrows and sew together light birch-bark canoes, in which they navigate the rivers and lakes. Most of the tribes are tall and erect in figure; they are stern and quiet, proud of their power of bearing pain without showing any sign of it; but they are extremely cruel and revengeful in war or private quarrels. They have become much

more degraded since they came into contact with white men, and although the tribes in the south are rather increasing in number, those in the centre of the continent and in the north are rapidly dying out. In the far north, where the ground is frozen and snow-covered most of the year, there are tribes of small squat **Esquimaux**, who differ in many ways from the other American natives.



FIG. 18.—BROOKLYN SUSPENSION BRIDGE, THE LARGEST IN THE WORLD.

## CHAPTER XVII

### ARCTIC AMERICA

#### GREENLAND.

366. Although no one has yet reached the north of **GREENLAND**, it is known to be an island from the tidal currents which pass under the frozen sea, and the island is more than six times the size of the United Kingdom. The triangular or tongue-shaped southern end at **Cape Farewell** just touches the parallel of  $60^{\circ}$  N., the latitude of Shetland. The coasts are carved into a fretwork of fjords, but the cold Greenland current flows southward along the eastern shore, and always carries along ice-pack or masses of floe-ice, so that it is difficult to land from a vessel. A branch of the Gulf Stream flows northward up Davis Strait along the west coast, and keeps the fjords there free from ice most of the year, and consequently all the villages—there are no towns—have been built on that side. The interior is almost unknown; it seems to be a great high plain thickly covered with snow and ice—the *ice-cap*,—the weight of which makes it creep outwards to the sea in enormous glaciers. The ends of these glaciers break into irregular floating icebergs, which drift away southward. The first man to cross these frozen high plains from the east coast to the west was a young Norwegian explorer, Dr. Nansen, who travelled over on snow-shoes in the summer of 1888 and found the cold so keen that mercury was frozen. He reached the coast a few hours too late for the last steamer of the year, and so had to spend the long winter in Greenland. At sea-level the short summer is hot and the days

are long, so the ice vanishes from the south and west coasts, which become covered with pale lichens and mosses starred with small bright flowers. Rye and potatoes can often be grown in the south. An adventurous Norwegian, sailing from Iceland, sighted the east coast 1000 years ago, and from its snowy look he called it by a name meaning *White Shirt*; but 100 years later another came on the mossy southern land in summer, and gave it the less suitable name of *Green land*.

The natives are **Esquimaux** who dress in sealskins, men and women alike; they live in tents during summer, and in huts covered with snow all winter. In the farthest north they build bee-hive shaped houses of blocks of solid ice, and creep into them on all-fours through a long ice-tunnel. But these ice houses are kept so hot by large lamps burning seal-oil that the Esquimaux wear no clothes at all while indoors. Their only domestic animals are dogs, with long bushy tails curling over their backs; these are used to drag sledges over the snow. Fishing and seal-hunting are carried on when the sea is open in *Kayaks* or boats made of sealskin.

**367. People and Villages**—The island is a Danish possession, but has few inhabitants and little trade. **GODTHAAB**, opposite Hudson Strait, is the capital of South Greenland, and another village, **GODHAVN**, on Disco Island at the mouth of Disco Bay, is the capital of North Greenland. **UPERNAVIK** is the most northerly civilised settlement in the world (nearly 73° N.) The few Danish colonists live chiefly by hunting seals, polar bears, and sea-birds. During summer fleets of British whaling vessels used to move up the coast looking out for their game, crossing Baffin Bay when autumn set in, and returning southward along the opposite shores of Baffin Land and Labrador; but whales are now so scarce that only a few steamers go in pursuit of them.

#### ARCTIC REGIONS,

**368. The Farthest North.**—Many expeditions have been sent out by various nations to attempt to reach the North Pole. Most of these forced their way in summer along the west coast



of Greenland, until their vessels were caught in the ice. There they remained solidly frozen up all the long dark winter night of months in which the sun never rose, and pushed on farther when the *floe-ice*, as the frozen sea is called, broke up next year. In 1876 the greatest attempt ever made to reach the Pole was sent out by the British Government on the steamers *Alert* and *Discovery*. Two of the officers got within 400 miles of it by a long sledge journey over the frozen sea, but like all others they had to turn back half starved. In 1883, in a far less complete expedition sent out by the United States, one of the officers named Lockwood reached the farthest north point by travelling on foot over the rough ice along the west coast of Greenland to lat.  $83^{\circ} 24' N.$ , just 396 miles from the North Pole. The sufferings of arctic explorers are always great, for the cold in winter is terrible, and as only a few musk-oxen, white foxes, polar bears, or sea-birds can be shot, even in summer, a large supply of food has to be carried with the party. So great is the cold that iron becomes brittle and snaps like glass; the sledges used must therefore be fastened without iron nails. If one touches a piece of metal with the bare hand, the chilling of the skin is so severe that it makes a sore like a burn, and when the sun shines during the long summer day of several months, circling slowly round the sky, and never dipping below the horizon, the glare on the snow produces giddiness and blindness.

**369. The North-West Passage.** -If steamers could sail round the north coast of America, it would be by far the shortest journey from Europe to eastern Asia. Any one can see this by measuring with a piece of string on a school globe. Many costly expeditions, first in sailing vessels and latterly in steamers, have been sent out to try to force such a passage during the last 300 years. In one of the more recent attempts the brave and daring Sir John Franklin was lost, and ship after ship sent out in search of him explored the ice-bound islands, and so got good maps drawn of the arctic coast of North America. But of Franklin all that was found was the proof that he had perished of cold and hunger, after getting farther to the west by the long-sought passage than any other traveller had done. At last, in 1850,

Maclure passed from the Pacific through Bering Strait, and sailed along a narrow lane of water between the north shore of Alaska and the ice of the Arctic Sea, past the mouth of the great Mackenzie River to the arctic archipelago. Here his ship stuck fast in the ice, but after three dreadful years of hardship and toil, the party pushed their way eastward on foot over the frozen channels, and met a ship in Lancaster Strait, north of Baffin Land, by which they returned home through Baffin Bay and Davis Strait. No one has made the journey since.

In spite of the perpetual ice and snow of the polar regions, beds of coal have been found far north on the coast of Greenland, showing that a very long time ago the climate must have been mild.

370. To the east of Greenland there are several groups of large islands, usually classed with Europe, which may be reached in summer. **Spitzbergen** is the best known, lying about 500 miles north of Norway, and often visited by whalers and seal-hunters. During the summer day of four months long the snow melts from the south coast, moss and flowers spread over part of the land, and vast flocks of sea-birds arrive from the south. But the whole interior, an area equal to Scotland, is a high plain rising into rugged mountains, whence great glaciers flow to the sea. Although some men have built houses and lived on the islands for many years, the fear of the winter night, four months long, has prevented any village being formed. To the north-east and due north of Nova Zembla, an Austrian exploring expedition discovered a new coast, which they called **Franz Josef Land**, in honour of their emperor; it closely resembles Spitzbergen.

#### ALASKA.

371. The north-western portion of North America was discovered by Russian sailors in 1741, and a Russian settlement was subsequently made there, but in 1867 the United States Government bought the whole land from Russia, and since then it has been a *territory* of the United States.

**Alaska** is more than four times as large as the United King-

dom. It covers a narrow strip of coast bordering the Dominion of Canada, with off-lying islands, from the 55th parallel north-westward to Mount St. Elias, and then the whole great peninsula lying west of a line drawn due north to the Arctic Sea. Tundras, mossy swamps, and snow-clad mountains make up most of the territory. The winter is bitterly cold, the summer wet and mild, and life is then made intolerable by swarms of mosquitoes. There are wide pine forests, and the great river **Yukon**, which is navigated by steamers for 1000 miles, as well as many smaller streams, swarm with fish. The islands in Bering Sea are almost the only haunt of the valuable fur-seal, from the skin of which the beautifully soft bronze coloured fur, quite different from that of the common hair-seal, is made. The United States Government only allow 250,000 seals to be killed each year, in order to prevent the race becoming extinct. **SITKA**, a quaint little half-Russian town of wooden houses on one of the southern islands, is the capital of the territory and the centre of trade. The Russians, who reached it by travelling east, are a day in advance in their reckoning, compared with the Americans, who reached it by travelling west. Thus in Sitka the Russians keep Sunday on the Americans' Saturday.



FIG. 19.—ON THE GREAT BANKS IN WINTER FISHING SCHOONERS AT WORK.

## CHAPTER XVIII

### THE DOMINION OF CANADA

**372. History.**—The continent of North America was discovered by Cabot, a captain who was sent out by King Henry VII to explore the North Atlantic, and reached the peninsula of Nova Scotia in 1497. Forty years later, on St. Lawrence Day, a French sailor, Cartier, entered the St. Lawrence River, to which he gave the name. In the beginning of the seventeenth century the French founded several colonies in this region. *Acadia*, comprising the hammer-shaped peninsula south of the St. Lawrence, and *Canada*, on both sides of the river up to the great lakes, were the chief. The *Hudson Bay Company* was shortly afterwards founded in England to trade in fur and occupy all the river basins draining to Hudson Bay. Many years of hard fighting between the French and British compelled the former in the beginning of the eighteenth century to give up Newfoundland (retaining only two little islets, *St. Pierre* and

*Miquelon*, which still belong to France), and also Acadia, which was re-named *Nova Scotia*, i.e. New Scotland. In 1763 the whole of French Canada passed to the United Kingdom. The colony of *New Brunswick* was separated from Nova Scotia on its western side after the New England colonies had formed themselves into the United States. *Prince Edward Island* also became a colony by itself, and Canada stretching along the St. Lawrence joined two divisions, Upper and Lower. Many loyal British subjects who left the United States, flocked to these colonies, and emigrants from the mother country arrived in increasing numbers to farm the land and work the mines. Gold was discovered in the far west in 1858, and diggers rushed in wild excitement to the Pacific coast, where the colony of *British Columbia* sprang into existence. The **Dominion of CANADA** is the name given to a confederation of the colonies, which in joining it became simply provinces. Each province has its own elected parliament for local government, but all send members to the Dominion Parliament meeting in Ottawa, which makes laws for the dominion as a whole, and is presided over by a governor-general sent out by the British Government.

**373. Area and Boundaries.**—The Dominion includes the vast territory of the Hudson Bay Company, and all the former colonies except *Newfoundland* and its province of *Labrador* on the mainland. The dominion is as large as all Europe, nearly thirty times the size of the United Kingdom. It is the largest connected stretch of land under one government with the exception of Russia and China. On the east its boundary is the Atlantic Ocean, on the north the ice-laden Arctic Sea, on the west Alaska and the Pacific Ocean, for it stretches right across the continent at its widest part. The southern boundary was settled by treaties with the United States, which border it on the south. The Strait of St. Juan de Fuca, separating the large island of Vancouver from the mainland on the south, is the only sea-frontier with the United States, and from its shore the boundary runs 1200 miles due east along the 49th parallel, and is marked by great iron mile-posts on the prairies. Then it crosses the Lake of the Woods, and south-eastward along the

Rainy River (called after its discoverer René) to Lake Superior. The boundary runs along the centre of Lakes Superior, Huron, Erie, and Ontario to the St. Lawrence at 75° W., whence it coincides with the parallel of 45° N. for 150 miles, and then takes a wide sweep northward along the watershed to the source of St. John River, down which it runs for some distance, then striking southward reaches the sea at the entrance of the Bay of Fundy.

**374. Climate.**—The climate of Canada is continental. Except in some places along the coast snow lies for at least three months, and in the north more than six months of the year; but the air is so dry and clear that the cold is not severely felt. Most people can skate; and snow-shoes, large light frames from 4 to 6 feet long, are used for getting over the soft snow in the country quickly. Wheeled traffic stops altogether, all carriages and carts are mounted on runners, and the streets are filled with sleighs gliding about silently, drawn by horses decorated with tinkling bells.

**375. Commerce and Resources.**—Canada is a great shipping country, and in the whole world only the United Kingdom, the United States, and Norway possess more merchant ships. There is constant and active trade with foreign countries, and protective duties are charged on everything brought from abroad which could possibly be made in Canada. The rapid rivers which connect the Great Lakes do not allow ships to pass, but ship canals have been constructed in order to avoid them, and small steamers from Europe can ascend to the head of Lake Superior, more than 2000 miles from the Atlantic. The chief resources of the country are wheat and farm animals. Timber (always called *lumber* in America, because it lumbered the ground of the first settlers) and furs, once the only things exported, now take a second place. Coal, copper, iron, and petroleum are found in some places, and are steadily increasing in importance. The thickly peopled part of the Dominion lies so close to the United States that, although separated by custom-houses at every railway, road, and harbour, the two make one country for post-office purposes. A letter posted in

a Canadian town is taken to any part of the Dominion or of the United States for 3 cents or  $1\frac{1}{2}$ d. Both countries have the same coinage of dollars (worth about 4s.) divided into *cents*—that is, hundredths. The continent is so wide, stretching through more than  $100^\circ$  of longitude, that in winter when the sun is rising at Labrador, it is noonday at Vancouver Island, hence it is impossible to use the same time throughout. The governments of Canada and of the United States adopted five standards of time, each holding in a belt of country  $15^\circ$  wide, running north and south, and each differing from the next standard by one hour. For instance, when it is 12.25 P.M., Greenwich time, properly regulated clocks in Halifax on the Atlantic show 8.25 A.M., at Quebec in the east of Canada 7.25, at Port Arthur in the centre 6.25, at Regina and in the mountains 5.25, and at Vancouver on the Pacific 4.25. The name of each standard of time and the central meridian on each side of which that time holds for a distance of  $7\frac{1}{2}^\circ$ , are therefore as follows—

Name of Time.	Atlantic.	Eastern.	Central	Mountain	Pacific.
Central meridian .	$60^\circ$ W.	$75^\circ$ W.	$90^\circ$ W.	$105^\circ$ W.	$120^\circ$ W.
Hour at Greenwich					
noon . . . . .	8 A.M.	7 A.M.	6 A.M.	5 A.M.	4 A.M.

**376. Nova Scotia** has a rough, indented coastline on the Atlantic. The climate is raw and often foggy, and its wealth lies in **fisheries**, lumber, and mines. Its chief town, **HALIFAX** (40), in the latitude of Bordeaux, stands on a splendid harbour which vessels can easily enter at all times of the year. It is almost the only port on the Atlantic coast of Canada which is not blocked by ice, so that in winter, when the St. Lawrence is frozen, the steamers from Glasgow and Liverpool stop there, and passengers go on by rail nearly 800 miles to Montreal. The harbour is fortified and is the only place on the continent where British troops are now stationed, all the rest of the Dominion being protected by a militia in which every able-bodied man may be called on to serve. **SYDNEY**, a small town at the north of Cape Breton Island, flourishes on account of coal-mines, and stands near the narrow entrance to the Bras d'Or (*i.e.* *Arm of*

*Gold*), a lovely lake-like expanse of the sea which fills the interior of the island.

**377. New Brunswick**, also chiefly of value for its forests and fisheries, adjoins the State of Maine in the Union. The largest town, **St. John (30)**, stands at the mouth of St. John River on the Bay of Fundy, where the tide rises faster and higher than anywhere else in the world. At some of the villages bordering this gulf passengers clamber on board a little coasting steamer lying stranded on the sand several miles from the sea, with steam up ready to start, the tide, however, rushes in so fast that in a quarter of an hour it reaches and floats the vessel, which sets off on her voyage.

**378. Prince Edward Island** is remarkable for the fertility of its soil. **CHARLOTTETOWN**, on the middle of the south coast, is joined by a railway running along the centre of the narrow curved island to all the little farming villages which cover it. In winter Northumberland Strait is frozen over for months, and ice-boats skim smoothly across it, keeping up communication with the harbours of *New Brunswick* and *Nova Scotia*.

**379. Quebec**, the oldest province, and formerly known as *Lower Canada*, is more French than English. Most of the people speak French, and the prevailing religion is Roman Catholic. To the north stretch pine and birch forests, where lumberers, or woodcutters, live in winter felling the trees. The railway from *Nova Scotia* runs close along the south or right bank of the St. Lawrence, and its principal station is **RIMOUSKI**, 350 miles from Montreal, where mail steamers take on board and land the mails when the St. Lawrence is open. **QUEBEC (60)** is a quaint old town on the left or north bank, partly built upon, and partly clustering round the rocky Heights of Abraham which are crowned by a fortress. This fort, *the Gibraltar of America*, has been the scene of many sieges, and in storming its heights just as he captured it and all Canada finally from the French, General Wolfe was killed in 1759. The steep and narrow streets are like those of a town in Normandy. French is heard everywhere, and sometimes even the policemen cannot tell a stranger his way in English. Timber yards line the river,



hundreds of saw-mills are at work, and lumber rafts are always drifting down the broad stream. The great ocean steamers now run 160 miles beyond Quebec to MONTREAL (190), a beautiful town built of gray marble, and the largest city of Canada. Its name meaning *Mount Royal* was given from a hill which rises behind the town. The site is an island at the point where the Ottawa River runs into the great St. Lawrence, here 2 miles wide. It is just opposite the mouth of a canal from Lake Champlain in the United States, by which vessels may reach New York, and at this point the St. Lawrence is crossed by its first bridge, the **Victoria Bridge** carrying the Grand Trunk Railway. Montreal is the great railway centre of the Dominion as well as its chief summer seaport. Lines radiate southward over the most thickly peopled part of the province, where there are many industrial towns and farming centres, and several junctions are made with the railways of the United States.

**380.** Ontario province, formerly Upper Canada, borders the **great lakes** on the north. It includes the most romantic scenery of the St. Lawrence, from the Lake of a Thousand Isles, 180 miles above Montreal, eastward through a series of wild rapids that the courage and skill of the Canadian pilots enable steamers to "shoot"; but vessels going to the lakes require to make use of canals. The capital of the Dominion is **Ottawa**, a small town on the river Ottawa, distinguished for its fine public buildings. This river, the largest tributary of the St. Lawrence, separates the provinces of *Ontario* and *Quebec*, and drains a lake-studded and wood-clad region to the north, where most of the Canadian lumbering is now carried on. Close to Ottawa a series of grand rapids and falls is almost hidden by the multitude of saw-mills which the rushing water keeps at work. **KINGSTON**, on the north shore at the eastern outlet of Lake Ontario, 170 miles from Montreal by rail, is a fortified harbour at the mouth of a long canal leading from the Ottawa River, and has a military college. **TORONTO** (120), 160 miles farther west, near the end of the lake, with the chief university in Canada, is an agricultural centre and a busy port, trading with the United States. The network of railways is closest and the population densest over

the peninsula which projects between Lakes Ontario, Erie, and Huron; this is a well settled agricultural region and a scene of mining enterprise as well. A great suspension bridge carries the lines across the Niagara River on the east below the falls, and large terry steamers, on board which the trains are run bodily, cross the Detroit River on the west in summer, but in winter the rails are often laid across the ice. HAMILTON, at the west end of Lake Ontario, thrives on the trade of this region. LONDON, in the middle of the peninsula, is an energetic railway centre, and the names PETROLIA and SALINA, belonging to towns farther west, tell the tale of oil-springs and salt-pits worked in the neighbourhood.

**381. Manitoba**, a square province west of *Ontario*, is traversed by the Canadian Pacific Railway; and its capital, WINNIPEG, 1200 miles west of Montreal, has risen in a few years from a solitary fur-fort to be one of the most active wheat-trading towns. Wheat, indeed, has been to *Manitoba* what gold was to Victoria, and diamonds to Griqualand. In the broad valley of the north-flowing Red River the prairies make the best wheat land in the world. Emigrants are flocking to take up farms in the district, and railway companies competing, and sometimes even fighting, for the right to lay lines in all directions. Two railways run up the Red River valley southward into the United States. As the distance to Montreal, the nearest port for ocean steamers, is so great, a line is proposed skirting the great Lake Winnipeg, and along the Nelson River, north-east to PORT NELSON, on Hudson Bay. It is hoped that strong steamers, specially built for sailing through ice, will be able to navigate this sea for five months of the year, and so carry the enormous wheat harvests far more quickly to England.

**382. Provinces of the Far West.**—From Winnipeg the Pacific Railway is laid across the wide undulating prairies of *Assiniboia*, past the growing town of REGINA, amongst cattle-ranches (*i.e. ranges* or *pastures*) and across the territory of *Alberta*, up the gradual slope to the Rocky Mountains. It passes between the precipitous walls of a magnificent gorge called Kicking Horse Pass into the province of *British Columbia*.

Then it crosses the Columbia River and descends the winding cañons of the Thomson and Fraser Rivers to VANCOUVER, opposite Vancouver Island. This is a distance of 2500 miles from Montreal, or more than 3000 miles from the Atlantic seaport of Halifax. NEW WESTMINSTER, 15 miles from the mouth of the Fraser, was formerly the capital of the colony. The capital of the province is now VICTORIA, on the south coast of Vancouver Island, with fine views of snow-clad mountains to the east and south. It is built close to the natural harbour of ESQUIMAULT, the headquarters of the British fleet in the Pacific; and a railway leads to the valuable coal-mines of NANAIMO on the east coast. This coal is largely exported, and it is important for the success of the Canadian Pacific Railway that it should have coal-fields near its terminal stations, both on the Atlantic and on the Pacific. Gold is mined in the river valleys of the mainland by thousands of diggers. The rivers swarm with fish, especially with salmon, which are caught in thousands by the Indians, and tinned for export by laborious Chinamen. The climate is like that of Great Britain, being mild and often damp, but there are fine woods and some good farming land, and a great many emigrants are settling in the province.

383. The Great North-west of Canada contains 2,000,000 square miles of almost uninhabited land, without a single road, yet much of it may some day become covered with towns and railways. West of the Mackenzie River the land is so fertile that the long summer days raise and ripen grain in two or three months; but the winters are also long, and very severe. The great chains of lakes and the majestic rivers flowing for thousands of miles are the only highways; and it is told how the first traveller Mackenzie journeyed northward along the seemingly endless river that now bears his name, until at last he sighted the unfrozen waters of the Arctic Sea, and caught a glimpse of the white dolphins tumbling about in the waves before he had to turn and hasten southward to escape the winter.

Over these districts many wild tribes of native Indians still roam hunting the bison, the deer, and bear, and trapping fur-bearing animals, such as the beaver, the silver fox, and the ermine,

which are sold to agents of the Hudson Bay Company. In winter **dog-sleds** are the only means of travelling over the snow, but in summer long light **canoes** made of sheets of the tough white bark of the birch tree, sewn together and cemented with resins from the *trées*, carry goods and passengers over the lakes and down the rivers. Here and there a portage (or carrying) has to be made; the canoes are unloaded and carried easily for a mile or two to escape rapids or to cross a gentle watershed from one river system to another. The French and half-breed *voyageurs* (*i.e.* travellers), as they are called, are as skilful in managing these light boats in dangerous rapids as the Indians themselves; and during the British war in Egypt in 1882 a number of them were taken over to navigate the rapids of the Nile.

#### NEWFOUNDLAND.

384. The colony of **NEWFOUNDLAND**, with its dependency on the sterile coast of *Labrador*, had not joined the dominion of Canada up to 1889. The island, which is less than 1700 miles from the coast of Ireland, is shaped like a triangle. The acute-angled apex points up the St. Lawrence, and the base, which runs from north-west to south-east, facing the Atlantic, is cut into a succession of immense rocky bays and long ragged peninsulas. These are nearly severed from the mainland at Trinity Bay, the landing-place of a number of **telegraph cables** from Ireland and Britain. The island is a third larger than Ireland, but its foggy and inclement climate makes farming unsuccessful. Mines of coal and copper are worked, but **fishing** and **seal-hunting** are the chief industries; the seal and cod-fish on the old issue of Newfoundland stamps were true types of the wealth of the country. South-east of the south-eastern point, Cape Race, the continental shelf extends for 300 miles, and in many parts of it the water is only 10 fathoms deep. This forms the **Great Banks** to which fishermen come from America and Europe, sure of hauling in great cod as fast as they can work the lines, and sure also of braving rough seas and constant fogs, and often of icebergs drifting in

amongst the fleet. *St. John's* (30), in the south-east of the island, boasts of a natural harbour so deep that the largest vessels can enter at all states of the tide, but so narrow at the entrance between rocky walls that only one ship can pass at a time. It is the headquarters of the seal-hunting steamers that work in Baffin Bay, and has great factories for fish-preserving and making cod-liver oil. The Strait of Belle Isle, in the north, although closed by drifting ice in winter, is a busy channel in summer, for all the trade between the *St. Lawrence* and the British Islands passes through it.



FIG. 20.—RIVER STEAMERS IN NEW YORK HARBOUR. THE TALL BUILDINGS ON THE RIGHT ARE GRAIN-ELEVATORS.

## CHAPTER XIX

### SOUTHERN NORTH AMERICA

#### THE UNITED STATES OF AMERICA.

**385. History.**—The **UNITED STATES**, which take rank along with the great powers of Europe, have come to their present size and population by several distinct steps. Sir Walter Raleigh founded an English settlement on the east coast of North America about the end of the sixteenth century, and named it **Virginia** in honour of the unmarried Queen Elizabeth. This colony after a time became prosperous through tobacco plantations, to work which negro slaves were brought over from Africa. A party of the oppressed Puritans of England known now as the Pilgrim Fathers, crossed the Atlantic in a little vessel, the *Mayflower*, and founded the colonies of **New England** in 1620, close on the borders of what was then French Canada. A few years later Lord Baltimore founded **Maryland**, farther south, as a refuge for the persecuted Roman Catholics of Ireland. A

Dutch colony was then established at the mouth of the Hudson River between the two English districts, but after fifty years this was seized by the British, and the name of its capital New Amsterdam was changed to New York. At the close of the seventeenth century the Quaker, William Penn, bought a great area of wooded land from the Indians, whom he recognised as the rightful owners, and founded the colony, which was called after himself, **Pennsylvania**. For many years, the colonists had a hard struggle. Dark woods, full of warlike and treacherous natives, stretched to an unknown distance westward, and a stormy sea lay in front; but they laid out the land in well-cultivated farms, and by their perseverance they grew strong men, brave, patient, and independent. The colonies were increased by **Georgia** in the far south, named after George II, and except the peninsula of Florida which belonged to Spain, all North America, as far west as the Mississippi, had become British in 1770 after the French had been conquered in Canada. The daring French *voyageurs*, however, crossed the Great Divide south of Lake Superior, and launched their canoes on the almost unknown Mississippi, down which they floated week after week, and annexed all the new wild land to the west under the name of **Louisiana**, after their king, Louis XIV. The Spaniards had long occupied the extreme south and south-west of the continent. But throughout the woods and over the vast grassy, sea-like prairies hundreds of tribes of the Red Indians hunted the bison, and fought with each other undisturbed by white men. The British Parliament laid some taxes on the American colonists, who then numbered 3,000,000; but they refused to pay unless they were represented in the Imperial Parliament. British troops were sent over to enforce payment; but on 4th July 1776 thirteen of the American colonies joined together as a republic with the name **The United States of America**, and adopted a constitution or principle of government which gave great political freedom. A war followed, and the colonists, aided by French officers and troops, won their independence, which was acknowledged by the British Government in 1783. In memory of the thirteen original states the

national flag was coloured in thirteen red and white stripes, with thirteen gold stars on a blue ground in one corner; and the national motto which was adopted, *E pluribus unum*, means "One out of many."

**386. Growth of the States.**—All of Canada, south of the Great Lakes, was at once made over to the new republic. Twenty years later Napoleon sold Louisiana to the United States to save it from the British, and after some time the Spaniards relinquished Florida, which was taken in as a state. In 1845 the southern republic of Texas, which once belonged to Mexico, entered the Union. The Mexicans objected to this and declared war; but the United States were victorious, and extended their dominion to the Rio Grande del Norte and to the Pacific coast north of the Gulf of California. At the same time a treaty with the United Kingdom fixed the northern boundary in the west at the parallel of 49° N., and except for the purchase of Alaska (§ 371) and of another little strip of land from Mexico the present limits were reached.

**387. The Civil War.**—The southern planters employed slave labour in the cotton and tobacco plantations, although the constitution of the republic said that all men were free and equal. Eleven of the southern states formed a separate republic, the Confederate States, in 1861. This republic lasted till 1865, and was at war all the time with the north, which at length triumphed, and the Union was restored. Slavery was abolished by Congress during this war, and at its close all negroes became free. The United States now cover the whole breadth of the continent from Atlantic to Pacific, between Canada and Mexico, an area equal to the whole continent of Australia, or 25 times as large as the United Kingdom.

**388. People.**—More than one-tenth of the people, chiefly in the southern states, are Negroes or of neg. descent. There are great numbers of Chinese in the west, working cheaply and patiently, but greatly hated and oppressed by the whites. The landing of any more Chinamen has been absolutely forbidden by the Government. The white population is steadily increasing by the immigration (or in-coming) of emigrants (or out-goers) from



all countries of Europe. The basis of the people is **English**, but **Irish** and **German** immigrants are by far the most numerous now. In some places there are towns and districts entirely peopled with Germans, Swedes, French, or Italians, speaking their own language, but as a rule they soon begin to talk English. Every one entering the country as an immigrant has to pay a tax, and any one who is not able to earn an honest living is sent back to the place he came from.

Restless energy and great enterprise are the chief characteristics of the people of the United States as a whole. There are no restrictions whatever on religion, and therefore, as in the United Kingdom, there are sects of every kind. The tribes of native **Indians** who remain are provided with specially reserved lands and carefully watched over by government, the officers in charge trying as much as possible to keep strong drink from them, but the Indians of the States are neither so numerous nor so independent as those of Canada.

**389. Government.**—The government of the country is republican, and each state is a separate republic, although they vary in size from the area of an English county to more than twice that of the United Kingdom. The people of each state elect a **Legislature** consisting of two houses and a governor, meeting in the capital. This is usually a small quiet town, and is seldom the metropolis, or largest city, of the state. Each state also sends a certain number of representatives to the two houses of **Congress** which meets at Washington. The **President** is the head of Congress; in all foreign affairs and in making appointments to offices he has much the same power as the king of a limited monarchy. However, if an act of Congress, to which he refuses assent, is passed a second time by a large majority, it becomes law even against his will. The **Supreme Court** of the United States, composed of the most learned judges who are elected for life, is above both Congress and president, and its special work is to see that no laws contrary to the Constitution are passed in Congress or in the Legislature of any state. In the first week of November every leap-year a new president is appointed by an indirect vote of the

citizens; all work is stopped on the election day, and there is great excitement over the states. Another national holiday, always kept with enthusiasm, shown by volunteer reviews and fireworks, is Independence Day, the 4th of July. The Union consisted in 1888 of thirty-eight states with eight organised territories, most of which were intended to become states in 1889. But while they continue territories, the president elects their governor, and they are only allowed to send one delegate to congress, who can speak on any subject but cannot vote. There is also the detached territory *Alaska* and the little *District of Columbia* containing the capital of the Union, which are under the central government directly, and have no representatives at all. The political divisions into states and territories has spread like a patch-work quilt over the land, the pieces being smallest and least regular in the long settled north-east, where natural boundaries are often used, but becoming larger and squarer towards the west. Each state makes its own local laws. Education is compulsory in some and well cared for in all. The states are subdivided into counties and the counties into parishes or townships as in England.

**390. Trade Policy.**—Except in drink (traffic in which is prohibited in some states) there is perfect freedom of trade between all the states of the Union; but by special acts of Congress foreign trade is carried on strictly on the principles of protection. For example, cotton cloth can be made far more cheaply in Lancashire than in New England, but the Americans want to keep their own mills at work, and a heavy tax is therefore put upon English cloth, so that when it gets into the shops (or stores, as they are always called), it is no cheaper to buy than the cloth made at a much greater expense in the States. It is the same with everything; even books printed in English have to pay a high duty before they can be landed. Yet, in spite of this, a great deal of foreign trade goes on, and chiefly in British ships.

The war navy is weak, and the standing army of 25,000 men is very small compared with those of Europe, but every state has a large militia force.

**391. The Natural Resources** of the country are enormous and very varied. The low plains of the south coast and of the east coast as far north as Cape Hatteras form the **Cotton region**. Almost the whole valley of the Mississippi is a **Corn region**, growing *maize* or Indian corn (to which the name *corn* is confined). The north-western part of the Mississippi valley, and that of the Red River of the North is the **Wheat region**. The **Lumber region** extends round the great lakes and in the north-east. The north of the Appalachians is the chief **Iron and Coal region**. The great plains sloping up to the Rocky Mountains, all the way from Canada to Mexico, form the **Pasture region**, where cattle are reared in millions. Finally the whole land west of the Rocky Mountains is the **Region of precious metals**.

The great navigable rivers carry an immense amount of commerce in huge wooden steamers, the passengers' cabins on which tower story above story (see Fig. 20). There are many **canals**, the most important being the Erie canal, connecting Lake Erie with the Hudson River. There are more **railways** in the United States than in any other country, and they are extending so rapidly that it is useless to try to describe them. In the north-east they make a close network of lines running in all directions. In the south and west they are fewer as yet, and are either main lines joining the chief towns, or else they are built across uninhabited prairies to enable pioneer settlers to reach new farms.

#### *The Atlantic States.*

**392. The six New England States** all lying east of the Hudson River are the smallest but the most densely peopled in the Union, and manufactures are most diligently carried on in them. They cover the northern mountains of the Appalachian chain, which, especially near the Canadian frontier, are full of beautiful lake and forest scenery. The rivers, which are short and swift, are very picturesque; and what is more important, they give unfailing water-power for running machinery. The most important minerals are **building stones**, such as granite and slate.

**393. Maine**, the most northerly and easterly of the United States, familiarly called the *Pine-Tree State* from its lumber industry, has also great fisheries on the coast. Its harbour of PORTLAND is joined to Montreal by the Canadian Grand Trunk Railway, and many of the transatlantic steamers discharge cargo there in winter when the St. Lawrence is frozen. This was the first state to prohibit the sale of intoxicating drink, which can only be bought at the druggists' shops for use as medicine.

**394. New Hampshire** includes Mount Washington, half as high again as Ben Nevis, and like it, crowned by a weather observatory, to which, however, a railway climbs the mountain side. The Merrimac, flowing southward through the state, is the busiest industrial river in the world. CONCORD and MANCHESTER, the two chief towns, are situated on it; the latter got its name from its manufactures of cotton goods.

**395. Vermont**, so called because it includes the broad grassy uplands of the Green Mounts (*les verts monts*, in French), reaches to the shore of Lake Champlain, and is famous for its sugar-maple trees.

**396. Massachusetts** (*the Bay State*) is the most important New England State. BOSTON (450), playfully called "the hub of the Universe," has always been the chosen home of learning in America, where philosophers, men of science, poets, and artists form a cultivated society. It is finely built on a group of peninsulas projecting into a bay, which is deep enough to allow the largest ocean steamers to reach the city wharves. Its suburb, CAMBRIDGE, contains Harvard College, a great university, and the oldest in the States. Twenty miles to the north-east stands SALEM, the first village built by the Puritans in 1623; and 20 miles to the north-west is LEXINGTON, where the first fight of the War of Independence took place. The long peninsula of Cape Cod (the name reminds one that Massachusetts is the greatest fishing state) curves like a human arm shielding a wide bay. At PLYMOUTH, on this bay, the rock on which the Pilgrim Fathers landed from the *Mayflower* is still shown. LOWELL, on the Merrimac, close to the northern boundary, has enormous cotton factories, and with other smaller

towns engaged in similar industries, makes *Massachusetts* the first manufacturing centre for textiles. One of the railway lines west from Boston pierces the Hoosac Mountains, in the Appalachians, by a tunnel  $4\frac{1}{2}$  miles long, the longest in North America.

**397. Rhode Island**, the smallest state in the Union, is densely peopled. Its capital, PROVIDENCE (120), which was founded as a place of refuge for people whom the Puritans persecuted for their religious views, has grown to be a great manufacturing city. NEWPORT, on one of the numerous little coast islands, is a fashionable watering-place for New York.

**398. Connecticut** (an Indian name meaning *Long River*) borders Long Island Sound. The long river Connecticut flows southward through the State, and drives the mills of HARTFORD in the centre. This is a city of inventors who are always making ingenious things—"Yankee notions." In America the name *Yankee* (really a corruption of *English*) is given only to people belonging to the New England States. NEW HAVEN is the chief harbour, and WATERBURY is famous for manufacturing cheap watches.

**399. New York** (*the Empire State*) contains one-tenth of the population of the country, and extends from the Atlantic to Lakes Ontario and Erie. After passing Sandy Hook, which is a low cape jutting out from the south coast, a steamer from Europe passes through the Narrows, south of Long Island, and enters New York Bay. A colossal statue of Liberty enlightening the world, presented to the United States by the French Republic, acts as a lighthouse on one of the islands, the lantern being fixed in the torch the figure holds. NEW YORK city is built on a long peninsula about 2 miles wide, on the west side of which the broad Hudson River rolls down, and on the east tidal currents sweep to and fro through East River, which is not a river at all, but the end of Long Island Sound. A vast rectangular public pleasure garden—Central Park—occupies the middle of the town, around which the "streets" all cross the "avenues" at right angles, and are named by numbers and letters of the alphabet. The roar of traffic never ceases, the sky seems ruled with telegraph and telephone wires, passenger trains rush through the streets on railways raised on brackets over the

pavements, with stations at almost every corner. Tramcars follow every thoroughfare, and underground gas, water, and steam-pipes, and electric wires distribute light, heat, and power to houses and workshops. A huge suspension bridge across East River joins New York to BROOKLYN, a great and busy city on Long Island (see Fig. 18). The two are also connected by a constant stream of steam ferry-boats, and so is JERSEY CITY, in the small state of *New Jersey*, on the mainland, where all the railways from the west terminate. Altogether New York is the centre of a dense city population of over 2,000,000. The trade carried on is enormous; half the exports and two-thirds of the imports for the whole country pass through the harbour, and magnificent steamers, *Atlantic greyhounds* they are called from their speed, sail every day for Europe, arriving at Liverpool, 3000 miles away, within a week. ALBANY, the capital of the state, is reached by rail or else by steamer for 150 miles up the picturesque Hudson River. This stream is lined on its western bank for 20 miles by the *Palisades*, an unbroken wall of cliffs 400 feet high. The Erie Canal leads from Troy, a few miles farther north, past dozens of active towns to BUFFALO (200), a great port on Lake Erie.

400. **Pennsylvania**, stretching south of *New York*, with a very small share of coast on Lake Erie, and only the head of an estuary on the Atlantic, is in the richest mining region of the Appalachians. PHILADELPHIA (900)—the *city of brotherly love*, so named by the Quakers—is built in regular streets of neat brick houses, separated by many fine parks. It stands at the junction of the river **Schuylkill** (pronounced Skool-kill) and the **Delaware**, which is navigable for the largest vessels to the sea. It is the greatest manufacturing city of the country, and ships immense quantities of **petroleum**, which is often pumped for 300 miles through pipes from the wells. PADING, farther up the Schuylkill, is a great railway centre, and north of it, along the eastern slope of the Appalachians, there is a chain of mining towns, raising **anthracite coal** and working iron. CARBONDALE is the appropriate name of the most northerly town. On the western slopes of the mountains **bituminous coal**, and petroleum

to an even greater extent, are worked. Oil was as powerful in attracting settlers here as gold in California, and the names OIL CITY on Oil Creek, and PIT-HOLE CITY in the north-west, were given with good reason. At the junction of the Alleghany and Ohio Rivers, the twin towns of PITTSBURG (called after Pitt the English statesman, not named from its coal-mines) and ALLEGHANY (together 230) have sprung into greatness through ironworks. Comparatively little coal is now used, for



FIG. 21.—OIL WELLS IN PENNSYLVANIA. THE STRUCTURE ON THE LEFT IS A DERRICK FOR WORKING THE BORING TOOL IN MAKING A NEW WELL. ON THE RIGHT TANK WAGGONS ARE BEING FILLED FROM THE STORAGE TANKS.

this purpose, as immense stores of **natural gas** underlie the country, and this gas is led by pipes to houses and factories, supplying a cheap, clean, and smokeless fuel. The Ohio is navigable for steamers down to its junction with the Mississippi 1000 miles distant.

401. Delaware and Maryland share the land between Delaware Bay and Chesapeake Bay, which is sometimes called the *Peach Peninsula*, from the fine fruit it grows. It is in the latitude of North Africa, and oysters thrive wonderfully in the

warm water of the sandy bays. **BALTIMORE** (330), on Chesapeake Bay, named after the founder of *Maryland*, is the seat of the great Johns Hopkins University, and so full of fine architecture that it is called the monumental city. The Civil War raged fiercely in the long valley that runs northward through *Maryland* from *Virginia* to *Pennsylvania*, and one of the chief battles was fought at **GETTYSBURG**, in the last-named state.

**402.** The **District of Columbia**, a small strip of land on the left bank of the Potomac, contains **Washington** (150), the federal capital, named after George Washington, the first president. This "city of magnificent distances" spreads over an enormous space, for only one-half of the ground is occupied by private houses and gardens, all the rest is filled by public parks and tree-planted streets, which are broader than any others in the world. The **Capitol** or parliament house, where the Congress meets, is a vast domed building in the centre, from which the city radiates out on all sides. The city is exactly 77° W. from Greenwich.

**403.** The **Southern Atlantic States** contain no large towns, and are mainly occupied by plantations. **Virginia**, a tobacco-growing state, stretches inland from Chesapeake Bay to the centre of the Alleghany Mountains, the principal range of the Appalachians. **West Virginia** spreads over the mountain slope on the north-west as far as the Ohio. **RICHMOND**, on James River (named after James I. of England), was the capital of the Confederate States during the Civil War.

**404.** **North Carolina** includes the lagoons and sand-bars behind Cape Hatteras. It also contains part of the Great Dismal Swamp, where no one can live, and the ground cannot be cultivated. Rice grows on the low coast lands of this state and of **South Carolina**, and cotton is also cultivated. **WILMINGTON** and **CHARLESTOWN** were both famous for successful blockade-running in the Civil War, and are now the chief towns.

**405.** **Georgia** has become one of the most advanced of the southern states. The sea-island cotton, grown on the little islands which run as a picturesque chain along the coast, brings the best price in the British market on account of its long glossy



fibres. The chief town is SAVANNAH, a hot unhealthy seaport on the grassy plains of Savannah River, which divides *Georgia* from *South Carolina*.

406. *Florida*, mainly a low peninsula, nowhere more than 200 feet above the sea, is covered with the most luxuriant vegetation, and full of marshes and sluggish streams, where alligators bask in the warm muddy water. Orange groves cover thousands of acres, and the native woods are of great value, especially the "cedar" for pencil-making, which is really a kind of pine. It is cut and shipped at CEDAR KEYS, on the west coast. Invalids flock to *Florida* in winter from all the northern states to enjoy the mild semi-tropical climate, but as yet there are railways only to the northern towns. The south, including the vast swamps of the *Everglades*, is in great part unexplored. ST. AUGUSTINE, on the east, one of the chief visitors' resorts, is the oldest town in the United States, as it was founded by the Spaniards in 1565. The largest town, KEY WEST, is built on a coral islet at the south-west end of a long line of keys, or reefs, curving away from the point of the peninsula. It is an important naval station for the Gulf of Mexico.

#### *Eastern Central States.*

407. **Southern Group.**—The Mississippi River separates states throughout its whole length, and it was so long the boundary of the country that the states bordering it on the east are often spoken of as *western*, although they are really central. Four lying south of the Ohio River form the southern group. The name **Alabama** (*i.e. Here we rest*) was applied first to its tranquil river, which flows through the middle of the state and falls into Mobile Bay, the best harbour on the Gulf of Mexico. Vast quantities of cotton are shipped here from the town of MOBILE. The southern forests bordering on *Florida* are darkened by long dry moss hanging from the branches, which is collected for stuffing mattresses. Like its neighbours, *Alabama* is a great cotton region, and when the cry "Cotton is King" split asunder the United States on the question of slavery, its capital MONTGOMERY became the first capital of the rebel Confederate States.

**Mississippi** (*i.e. Father of Waters*) takes the name of the wide river that rolls for 500 miles along its western frontier. At VICKSBURG and NATCHEZ bales of cotton are loaded on river steamers, which race each other down the muddy stream to New Orleans. The long narrow strip of **Tennessee** covers the land from the Appalachian heights to the Mississippi. It contains a number of artificial mounds and rude stone forts, the relics of some ancient half-civilised Indian tribe. NASHVILLE, on the Cumberland River, and MEMPHIS, on the Mississippi, are the most notable towns. **Kentucky** (*i.e. the land dark with blood*) reaches north to the Ohio, and suffered greatly from Indian raids in the early settlers' days. LOUISVILLE (120), on the navigable Ohio, has a great trade in tobacco, for which this is the chief state, and in horses fed in the rich "blue-grass region," through which the Kentucky River flows. The limestone rocks are hollowed into wonderful caverns. The most famous of these, called from its size the **Mammoth Cave**, has more than 100 miles of galleries opening into magnificent pillared halls like underground cathedrals, all in darkness, and the lakes and rivers which traverse some of them are inhabited by pale blind fishes.

**408. Northern Group.** — This remarkable group often called the *Food States*, because of the maize, wheat, cattle, and food material of all kinds they produce, occupies the triangle of low undulating ground between the great lakes on the north, and the navigable waterways of the Ohio and the Mississippi on the south-east and west. It is a region peopled by men of wonderful energy, many of them being Germans and Scandinavians, and the towns grow so quickly that it is not easy to say what their population is. Some have increased fourfold since the census of 1880.

**409. Ohio** has two great ports, TOLEDO and CLEVELAND (180), on Lake Erie, where iron and petroleum are worked. All over the State towns are lighted and factories worked by the abundant **natural gas**. CINCINNATI (250) has enormous slaughter-houses, where thousands of pigs (or *hogs* as they are called), fattened on the maize-fields all round, are killed and cured. Before the Civil War the Ohio (an Indian name meaning *Beautiful River*) separated the slave states of the south from the free

states of the north, and for a long time slaves who escaped across the Ohio became free.

410. In **Indiana**, where savage Indians long troubled the settlers, the winters on the shore of Lake Michigan are long and snowy, with 'two months' sledging, but on the Ohio in the south snow never lies. Its capital **INDIANAPOLIS** (100) in the centre, is the junction of more than a dozen different railways, and is the largest city in North America which is not on a navigable waterway.

411. **Michigan** (*i.e. Great Lake*) covers two peninsulas, that project between the Great Lakes. These are covered with the finest forests of the Union, and conceal the richest beds of **rock-salt**. **DETROIT**, 120 (*i.e. the Strait*), on the strait separating Lakes Huron and Erie, is the finest harbour on the Great Lakes. **SAGINAW** and **BAY CITY**, on Saginaw Bay, are the chief lumbering centres of the United States. **Apples** grow in great perfection on both sides of the Great Lakes and south-eastward along a narrow belt stretching to the Atlantic. At **SAULT ST. MARY** (*i.e. St. Mary's Falls*), joining Lakes Huron and Superior, there is a ship canal to avoid the rapids. The south shore of the latter lake is bordered for 12 miles westward by a line of lofty vertical cliffs so curiously carved by nature that they are called the *Pictured Rocks*. On Keweenaw Point, projecting into Lake Superior, the famous *Calamut and Hecla* **copper-mines** are the most productive in the world.

412. **Illinois**, the flattest inland state, has a long western boundary in the Mississippi. It stretches northward from the junction of the Ohio with the main river, where **CAIRO** is a busy port, to the south-west corner of Lake Michigan. Although the old race has vanished, it once more well deserves its Indian name, the land of the *Illini* or Great People. No other state grows so much maize or oats or contains so many miles of railway; indeed, in 1886, there was more railway line in Illinois than in the whole United Kingdom. There is coal and iron in abundance; lead is mined at **GALENA** (called after the chief ore), and the deposits extend into the neighbouring states on the north-west. The chief industry is feeding vast herds of **lean cattle** and **hungry pigs** which are driven in from the prairies

of the far west and south where they were reared, and after fattening are slaughtered and "packed" at Chicago on the lake. The population of CHICAGO with its suburbs is probably about a million, but is increasing quickly. Its large artificial harbour on Lake Michigan ships grain and tinned meat to the eastern states, and sometimes direct to Liverpool. In the meat-packing works in 1887 the average rate day and night all the year round was ten pigs and five cattle killed, cleaned, cured, or tinned, and exported every minute! The whole city—then less than half its present size—was burnt to the ground in 1871; but buildings of brick or stone or iron were quickly raised instead of the wooden houses. The streets were made wider and perfectly straight, all crossing at right angles. Railways run through them all, and even through the many public parks and pleasure gardens. All the lines are worked by level crossings as the land is quite flat, and the noise of trains and the whistling of engines never ceases day or night. Every one in Chicago is always in a hurry. The city is supplied with water by pumping through a tunnel which is bored under the lake for 2 miles.

**413. Wisconsin**, to the north, is a lumbering (*i.e.* timber-cutting) and grain-growing state, rich in relics of the old mound-building Indians. Its capital, MADISON, is one of the most beautiful cities of the west, both in architecture and situation. MILWAUKEE (160), on Lake Michigan, the largest town, is a typical grain-shipping port, its wharves lined with huge elevators (see Fig. 19) for loading vessels quickly. At the little town of PORTAGE, on the Great Divide, the Wisconsin (*i.e.* *Wild Rushing River*), flowing to the Mississippi, comes so near the source of the Fox, flowing to the lake that their waters sometimes meet.

*Western Central States.*

**414. The Wild West.**—The broad, gently swelling prairies rising from the Mississippi to the base of the Rocky Mountains, are divided into a double row of states, those in the north and centre being now the most rapidly progressing regions in the world. Well-situated villages grow into cities, and railways are planned and laid down over the prairies, along the river valleys,

and through the passes of the wild western mountains at an astonishing rate. The thick felt-like covering of turf on the prairie is almost waterproof, and no rain reaches the soil below until the pioneer farmer breaks it up with sharp ploughs, then it becomes very fertile. In each of these prairie states one day in the year is kept as a holiday, called *Arbour Day*, when each citizen is expected to plant a tree; thus the prairies are getting covered with woods, and as a result the rainfall is increasing and the country becoming better and better for farming.

**415. Minnesota** (*i.e. Sky-blue Water*) is a land of lovely little lakes just west of *Wisconsin*, and lies on the junction of the Height of Land and the Great Divide, whence rivers flow to the Gulf of St. Lawrence, the Gulf of Mexico, and the Arctic Sea. It covers the eastern half of the Red River valley just south of Manitoba. Wheat is king here, as cotton is in the Gulf states. The rich soil brings it forth in unequalled abundance, and railways carry the heavy harvest to ST. PAUL (180), on the left, and MINNEAPOLIS (110), facing it, on the right bank of the Mississippi, at the head of river navigation. These towns are just below the falls, which drive countless flour mills, grinding the grain as it comes in, so that only the flour, which is less bulky and more valuable, needs to be sent out by rail to the lakes or the Atlantic harbours.

**416. Dakota** (a territory separated into the two states of *North* and *South Dakota* in 1889) has vast wheat farms in the western half of Red River valley. One field measured 1 mile in breadth and 45 miles in length, and was an unbroken expanse of wheat. One farmer may have as many as 100 reaping machines at work following each other in a long line. Gold and tin are mined in the Black Hills to the south-west, and much of the ground there is covered with soft shaly rocks that do not form soil and let nothing grow. These are known as the *Bad Lands*.

**417. Iowa** (*i.e. the Beautiful Land*) lies between the Mississippi and Missouri. Nowhere else are there so many pigs fattening on the enormous maize harvests that cover the prairie. They are sent in droves across the Mississippi into *Illinois*. At COUNCIL BLUFFS, on the Missouri, a great council was held between

the United States authorities and the Indian chiefs, after the purchase from France in 1803, in order to make a treaty of peace.

**418. Nebraska** stretches over the high plain west of the Missouri. Its name means *Shallow Water*, and except its boundary stream, there is not one navigable river. **OMAHA** (110), opposite Council Bluffs, is a pork-packing city, and a railway centre, where the Central Pacific Railway from San Francisco meets the line to Chicago and the east.

**419.** The Missouri (*i.e. Mud River*) flows diagonally across the State of **Missouri**, and shortly below its junction with the Mississippi 20 miles of the right bank are lined by the noble city of **ST. LOUIS** (480). This was founded as a lonely French fur-fort 150 years ago, when it was only reached by birch canoes from Canada. Now it is the busiest river-port in the world for steamers; and joined to its suburb **EAST ST. LOUIS**, in *Illinois*, by the last bridge that spans the Mississippi, at this point more than 1200 miles from the sea. *Missouri* is often called *the Iron State*, and its richest iron mines are in the south-east, where **Pilot Knob** and **Iron Mountain** are masses of solid ore. **KANSAS CITY** (200), at the junction of the *Kansas* (*i.e. Smoky River*, from its numerous falls), and the Missouri has its suburbs in the State of **Kansas**, which is bounded on the north by the 40th parallel, and stretches westward up the first terraces of the high plain towards the Rocky Mountains. Active mining cities and flourishing wheat and maize fields characterise this central state, which is midway between Atlantic and Pacific.

**420.** The **Arkansas River** flows south-east from **Kansas** through **Indian Territory**, which is reserved by Congress for peaceful Indian tribes (*Cherokees, Creeks, Choctaws*, and twenty others), who have been gathered into it from all the surrounding states. The river then enters the State of **Arkansas**, and joins the Mississippi. **LITTLE ROCK**, on a low cliff on this stream, 280 miles above its junction, is a river-port and railway centre; and **HOT SPRINGS**, farther west, is, as its name infers, a health resort.

**421.** **Louisiana** retains the old French name once applied to all the Western States together. It stretches southward from **Arkansas**, and includes the whole delta of the Mississippi. There

are 2000 miles of levees (French for *raised banks*) enclosing the river, which flows above the level of the low lands. The banks sometimes burst, and a branch stream called a *bayou* flows across the delta and enters the sea by a separate mouth. In the hot, low marshy lands sugar-cane and rice flourish, and cotton is greatly grown. BATON ROUGE (French for *Red Rod*), 200 miles from the river-mouth, is a famous river-port. NEW ORLEANS (220), built on the left bank along a S-shaped curve 100 miles nearer the sea, is second as an export harbour in the states only to New York. Here the cotton from all the states on the river is transhipped to ocean-going vessels, which are enabled to enter the mouths of the river by extensive engineering works carried out by Government. New Orleans still contains many French-speaking descendants of the original settlers. The last battle with the British troops, in a war which broke out in 1812, was fought here in 1815, a fortnight after peace had been signed in Europe; and had there been telegraph cables, or even fast steamers in those days, hundreds of lives would have been saved.

422. **Texas** (*i.e. Hunting Ground*), the largest state, twice as big as the United Kingdom, and divided into more than 200 counties, reaches south-west to the Rio Grande del Norte. In *Louisiana* the names are chiefly French; here they are Spanish. In the north-west the nearly rainless country is called the *Llano Estacado* or Staked Plain, from the stiff, stake-like, leafless stems of a tall plant of the cactus kind. Enormous crops of cotton are grown on the low coast lands and shipped at GALVESTON, one of the best harbours on the Gulf of Mexico. Close to this port, at SAN JACINTO, the Texans finally defeated the Mexicans in 1837. Cattle ranches (Spanish for *ranges*) are scattered over the grassy plains of the interior, and reckless "cow-boys" —as the men who tend the cattle are called—follow the herds of many thousand head on horseback, driving them to the sea-ports or railway yards for export. These men are hardly less wild than the fierce Apache Indians, who occasionally sweep down on the settlements, and their cattle are almost as untamed as the shaggy black bisons that used formerly to be sole possessors of the plains.

*Cordilleran States.*

**423.** *Cordillera* is a Spanish word meaning *little rope*, and applied in the sense of a mountain chain or mountainous region. The rugged heights of the Rocky Mountains and the barren high plains to the west are thinly peopled, but most of the political divisions in the Cordillera region are on the point of ceasing to be territories and of rising to the rank of states. Wherever water can be procured the soil has been found marvellously fertile, and great irrigation works carry water from the melting snows of the mountains, in some cases for more than 100 miles, to the wheat-fields and ranches.

**424.** *New Mexico* and *Arizona* (the latter containing copper-mines) are very dry, although well supplied with rivers, for these flow in deep cañons which they have worn down through the flat rock layers thousands of feet below the level surface of the country. The *Grand Cañon* of the Colorado, where that river crosses the north-west of *Arizona*, is more than 1 mile deep and some 300 miles long, and its sharp-cut bright-tinted sides seem almost to be built of mason work. The Southern Pacific Railway crosses these states close to the Mexican frontier. *Mesas* or flat-topped mountains occur all over these territories, and upon them, only to be reached by ladders in some cases, there are ancient towns, partly built of stone, and partly cut out of the solid face of the cliff by some extinct tribes of civilised Indians who have left no other trace. Some small settlements of *Pueblos* and *Moquis*, peaceable Indian tribes, live in much less elaborate houses of a like kind at the present day.

**425.** *Colorado*, north of *New Mexico*, got its name from the splendid colours of the bare rocky mountains seen in the clear air and bright sunshine. It is often called the *Centennial State*, because it ceased to be a territory and became a state in 1876, exactly a century after the Declaration of Independence. *DENVER*, the chief city, has become a railway centre. Right in the heart of the mountains, near the source of the Arkansas River, a rich deposit of lead-silver ore gave rise to the prosperous town *LEADVILLE*. *Wyoming* territory, farther north, is tra-



versed by the Central Pacific Railway; like *Colorado* it is an exact rectangle in outline, but the north-west corner is reserved by Government under the name of the **Yellowstone National Park** as a show place. Nowhere else in the world are there so many natural wonders packed so close together. There are magnificent cañons, rugged mountains, beautiful woods and lakes, and fantastic cliffs. Most remarkable of all, there are great geysers spouting columns of boiling water more than 200 feet high. The park includes part of the adjacent territories of **Idaho** and **Montano**, on the north and west, through which the Northern Pacific Railway makes its way.

**426. Utah and Nevada** occupy most of the Great Basin, a region of salt lakes and deserts. *Utah* is a territory, and on the shore of its great lake stands **SALT LAKE CITY**, the splendid home of the Mormons or "Latter Day Saints," a peculiar religious sect. *Nevada* is a state mainly because of the rush of population to the great **Comstock lode**. This is a mass of rock containing silver ore and gold that has been bored into with hundreds of miles of galleries, and the deep workings of which are drained by the Sutro tunnel driven for a distance of nearly 5 miles into the mountain side. **VIRGINIA CITY**, **GOLD HILL**, and **SILVER CITY** are clustered on this lode; but the state contains the villages **SILVER CREEK**, **EUREKA**, **RUBY HILL**, **DIAMOND**, **BULLIONVILLE**, and **MINERAL CITY**, their very names showing how its underground riches are being utilised.

**427. California.**—The southern half of the great coast outcurve on the Pacific is backed by the jagged snowy range of the Sierra Nevada, 200 miles inland, over which the Pacific Railway climbs through a succession of long snow-sheds. Between this great wall and the lower coast range that borders the shore extends a fertile valley 400 miles long and more than 60 wide, watered by the Sacramento River from the north, and the San Joaquin from the south. In the middle of the valley, to which these rivers flow, the Coast Range is broken by the grand inlet of San Francisco Bay, to enter which both streams turn abruptly westward. This valley is the centre of the State of *California*, a Spanish word meaning hot furnace, with

reference to the fierce rainless summers of the south. It is full of gold-mines and workings on the sides of every stream. Gold has become scarcer, but the fertile land is now waving with heavy wheat crops and the richest vineyards of the New World, and affording pasture to the best-woolled sheep in America. SAN FRANCISCO (250), on the east coast of the short southern peninsula which forms the *Golden Gate* leading to the harbour, grey up like a mushroom when the gold-seekers, called "the Argonauts of '49," arrived in thousands forty years ago. It is now a splendid city of solid stone buildings with wide streets traversed by cable tramways. There is one district of the town inhabited solely by Chinamen, who do most of the menial work. Magnificent ferry steamers carry whole trains of passenger carriages across the bay to OAKLAND, the terminus of the Central Pacific Railway; and from the harbour regular mail steamers run to Japan, China, the Sandwich Islands, and Australia. LOS ANGELOS, on the Southern Pacific Railway, is famed for its delightful winter climate. The Mercede, a tributary of the San Joaquin, flows down the **Yosemite Valley** (*i.e.* *Valley of the Big Grizzly Bear*), in one part of which there is a grandly picturesque gorge 6 miles long, less than one mile wide, and nearly one mile beneath the summit of the straight walled cliffs which surround it. Here the river Yosemite leaps over the edge as the highest fall in the whole world, and at the Bridal Veil Fall, like dozens of others in the same wonderful region, a river is scattered in fine spray before it reaches the ground. Giant pine trees, second in height only to the eucalyptus of Victoria, grow in several parts of the State. The names of towns usually tell something of the reason why they were founded: PLACERVILLE, where placer mining for gold was carried on; NEW ALMADEN, where great deposits of quicksilver ore recalled Almaden in Spain; SEVEN PALMS, CACTUS, BIG PINE, WHEATLAND, VINA, from the kind of vegetation which flourished.

428. The Columbia River, with the Northern Pacific Railway running in its valley, separates Oregon state from Washington territory, both great in wheat-growing and salmon-fishing, and so mild and wet in winter that the inhabitants are called "Webfeet" by the Californians.

## LIST OF STATES AND TERRITORIES.

AREA AND POPULATION FROM "STATESMAN'S YEAR-BOOK, 1889."

State.	Sign.	Area sq. miles.	Pop. in 1880.	Dens. persq. mile.	Time used.
Alabama . . .	Ala.	51,500	1,260,000	24.5	Central.
Arkansas . . .	Ark.	53,000	800,000	15	"
California . . .	Cal.	156,000	860,000	5.5	Pacific.
Colorado . . .	Col.	103,600	104,000	2	Mountain.
Connecticut . . .	Conn.	4,800	623,000	128.5	Atlantic.
Delaware . . .	Del.	1,900	147,000	75	"
Florida . . .	Fla.	54,200	260,000	5	Atlant. and Cent.
Georgia . . .	Ga.	59,000	1,542,000	26	"
Illinois . . .	Ill.	56,000	3,078,000	55	Central.
Indiana . . .	Ind.	36,000	1,978,000	55	"
Iowa . . .	Ia.	55,500	1,625,000	29	"
Kansas . . .	Kan.	81,700	996,000	12	Cent. and Mount.
Kentucky . . .	Ky.	40,000	1,619,000	41	Central.
Louisiana . . .	La.	45,400	910,000	21	"
Maine . . .	Me.	29,900	649,000	22	Atlantic.
Maryland . . .	Md.	9,800	935,000	95	"
Massachusetts . . .	Mass.	8,000	1,783,000	222	"
Michigan . . .	Mich.	57,400	1,637,000	28.5	Central.
Minnesota . . .	Minn.	79,200	781,000	10	"
Mississippi . . .	Miss.	46,300	1,131,000	24.5	"
Missouri . . .	Mo.	68,700	2,168,000	31.5	"
Nebraska . . .	Neb.	76,200	452,000	6	Mount. and Cent.
Nevada . . .	Nev.	109,700	62,000	0.5	Pacific.
New Hampshire . . .	N.H.	9,000	347,000	38.5	Atlantic.
New Jersey . . .	N.J.	7,400	1,131,000	152	"
New York . . .	N.Y.	47,600	5,082,000	107	"
North Carolina . . .	N.C.	48,600	1,400,000	29	"
Ohio . . .	O.	40,700	3,198,000	78.5	Atlant. and Cent.
Oregon . . .	Ore.	94,500	175,000	2	Pacific.
Pennsylvania . . .	Pa.	45,000	4,283,000	95	Atlantic.
Rhode Island . . .	R.I.	1,100	276,000	255	"
South Carolina . . .	S.C.	30,200	995,000	33	"
Tennessee . . .	Tenn.	41,700	1,542,000	37	Central.
Texas . . .	Tex.	262,000	1,592,000	6	Mount. and Cent.
Vermont . . .	Vt.	9,100	332,000	36.5	Atlantic.
Virginia . . .	Va.	40,100	1,512,000	38	"
West Virginia . . .	W.Va.	24,600	618,000	25	"
Wisconsin . . .	Wis.	54,400	1,315,000	24	Central.
<i>Territories.</i>					
Arizona . . .	Ariz.	113,000	40,000	0.5	Mount. and Pac.
Columbia District . . .	D.C.	60	177,000	2950	Atlantic.
Dakota . . .	Dak.	147,700	135,000	1	Mount. and Cent.
Idaho . . .	Id. T.	84,300	33,000	0.5	Pac. and Mount.
Montana . . .	Mont.	145,300	39,000	0.3	Mount. and Pac.
New Mexico . . .	N.Mex	122,400	119,000	1	Mountain.
Utah . . .	U.T.	82,200	144,000	2	Mount. and Pac.
Washington . . .	Wash.	66,900	75,000	1	Pacific.
Wyoming . . .	Wyo.	97,500	21,000	0.2	Mountain.
Alaska . . .	Alas.	531,400	33,000	0.1	"
Indian Territory . . .	Ind.Ter.	66,800	79,000	1	Cent. and Mount.
<b>Total . . .</b>		<b>3,501,000</b>	<b>50,497,000</b>	<b>14.5</b>	

## MEXICO.

**429. History.**—The Spaniards under Cortes in 1521 succeeded in subduing the powerful **Aztec** empire which had its seat on the high plains where the Sierra Madre and Rocky Mountain system meet. The Aztecs were civilised people who had conquered an earlier civilised nation, the **Toltecs**, long before. They had a written language and kept up schools; their cities were splendidly built and richly ornamented with sculpture, and the government of their emperors was firm and just. Their religion was a form of polytheism, and from *Mexitli*, their god of war, to whom they offered human sacrifices, the country took its name of **MEXICO**. For 300 years it remained a Spanish province, and the Aztecs were nearly exterminated before the country attained its liberty and became a republic. After many revolutions and wars, in which all the vast territories north of the Rio Grande del Norte were lost, an empire was set up by French troops in 1864. But although peace and good government were being restored, the United States Congress insisted that the French army must be withdrawn, and that no European power should ever interfere in the politics of any part of America. This is called the *Monroe Doctrine*, and in consequence of it the republic with its frequent revolutions and bad government was set up again in 1867. The country was divided into twenty-seven states and two territories, with a form of government like that of the United States in theory, but very imperfectly carried out.

**430. Surface and Products.**—The country is now more than six times as large as the United Kingdom, but the hot and arid peninsula of *Lower California* and large areas of the mainland are thinly peopled. Besides the steep high plain, averaging a little over a mile in height and nearly level on the surface, Mexico extends across the low isthmus of Tehuantepec, and occupies half of the broad, low, and fertile peninsula of *Yucatan*, bordering Guatemala in Central America. There are two **seasons** of the year in Mexico—the wet season when rain falls nearly every day,

extending from October to May, and the dry with a cloudless sky of the deepest blue lasting unbroken all the rest of the year. There are three zones of **climate** according to the height of the land. (1) The **hot lands** border the coast and are covered with **tropical vegetation** of every kind, such as sugar-cane, palms, bananas, the climbing vanilla and cacao trees; but they are very unhealthy, and yellow fever rages in the seaports during the dry months. (2) The **temperate lands** are the slopes of the mountains bounding the central plateau; here there are forests of evergreen oak, and the chief cultivated plant is the **agavé** or *American aloe*, a tall flower-stem springing from a bunch of thick stiff leaves. The fibre of the leaf furnishes a kind of hemp, and the juice flowing from cuts made in the stem is fermented to make *pulque*, the favourite drink of Mexicans. **Cactus** plants are very common; the stiff branches of the organ-pipe cactus are used as fences for enclosing fields; and another is cultivated to serve as feeding ground for the valuable little bright scarlet **cochineal** insects, the export of which was much greater before aniline colours were invented. (3) The **cool lands** comprise all the surface of the high plain; and the large towns are clustered on the highest and coolest part of this region, which is at its southern or narrow end, within the tropics, yet enjoying a climate of never-ending spring. **Maize** and **wheat** are successfully cultivated in this region, and large herds of cattle are kept. The chief wealth of the country is in its **silver-mines**, which occur all over the land, but especially along the line of the Sierra Madre on the west.

**431. People.**—Only a few of the people are of pure **Spanish** descent, although Spanish is the usual language. There are more than fifty native tribes, each speaking a distinct language, and most of the population are **Mestizos**, a mixed race, descendants of Europeans and “Indians.” **Negroes**, originally slaves, **Mulattos** or descendants of Europeans and negroes, **Zambos** or descendants of “Indians” and negroes, and immigrants from all the countries of Europe, are also present. The government is so feeble that **highway robbery** is a regular trade in many of the provinces. Nearly all the people are Roman Catholics, and

are ignorant and superstitious. The fine cathedrals rising from the central squares of all the large towns contrast with the straight wide streets of flat-roofed one-storied whitewashed houses. All the houses present a dead wall without windows to the outside, but have large cool rooms opening on little gardens in the central court. The Mexicans are all lazy and dreamy; most of the trade of the country is done by foreigners.

**.432. Towns.**—**Mexico** (300), the capital of the Republic, as it was of the old Aztec empire, stands between two fine lakes  $1\frac{1}{2}$  miles above the sea, and nearly equidistant from the Atlantic and Pacific. It is a perfect square; one set of streets run east and west, the others north and south, and in the centre rises the most magnificent cathedral of the New World brilliantly coloured and flashing with gold; but the city swarms with beggars. Although on level ground the scenery is fine, including a view of the snowy cone of **Mount Popocatepetl** (*i.e. the Smoky Mountain*), which rises 40 miles to the south. The crater of this extinct volcano is 1000 feet deep, and contains beds of sulphur which are worked, the sulphur being hoisted to the summit and conveyed down the slope for export. Mexico is a railway centre, one of the lines runs to the foot of this mountain. Another towards the south-east sends a branch through a rich valley where maize and agavés grow to **PUEBLO** (100), a cleaner and more beautiful town than the capital. Passing the great **Mount Orizaba** (which is visible to sailors for 200 miles), the railway descends through the magnificent scenery of the temperate region to the parched coast of the Gulf of Mexico, and terminates at **VERA CRUZ** (190 miles away), a half-deserted, filthy, and fever-haunted town, but the chief seaport of the country. A line passes westward from Mexico to **SAN BLAS**, a little port on the Pacific. This is the fifth and shortest railway, reckoning from north to south, that crosses the continent of North America from sea to sea. To the north-west a railway runs along the centre of the plateau and joins the Southern Pacific Railway of the United States on the frontier 1000 miles distant. Near the station of **QUERETARO** the unfortunate Emperor Maximilian was shot in 1867 by the republicans. **GUANAJUATO** (160 miles

from Mexico) is an old and interesting town built close to silver-mines on a succession of sharp hills and steep valleys, so that the houses have been built close together in very narrow streets, and are several stories high. This is a rare thing in tropical countries. LEON (120), a little farther to the north-west, is a prosperous manufacturing town, leather-work being the chief industry. GUADALAJARA, still farther west, near the edge of the plateau, contains a fine cathedral, and an amphitheatre for bull-fighting. ACAPULCO, on the meridian of  $100^{\circ}$  W., is the best Mexican harbour on the Pacific. MERIDA, in the north-west of *Yucatan*, is 40 miles north of the ruins of a magnificent Indian city built of huge blocks of hewn stone long before the Spaniards came, and the wonderful sculptures of its great temples are still preserved.

## CHAPTER XX

### CENTRAL AMERICA AND WEST INDIES

**433.** **Central America** adjoins North America at the isthmus of Tehuantepec in  $95^{\circ}$  W., and South America at the much narrower isthmus of Panama in  $80^{\circ}$  W. The **Pacific Coast** of this strip of land is bordered by deep water close to the shore, and runs in a south-easterly direction for 1200 miles, with few bays or headlands. The **Atlantic Coast** is quite different, it swells out into two projections, which are continued seawards by great banks covered with shallow water and studded with coral reefs. The blunt peninsula of Yucatan pointing northward, ending in Cape Catoche, separates the Gulf of Mexico from the acute-angled Bay of Honduras on the Caribbean Sea. South of this peninsula the eastern outcurve, shaped something like a cocked hat, comes to a point in Cape Gracias a Dios (*i.e.* *Thanks to God*) in lat.  $15^{\circ}$  N. Thence the uniform Mosquito Coast, appropriately named from its plague of insects, runs due south to the curving isthmus of Panama. A wide valley across the isthmus of Tehuantepec separates the mountain system of North America from the rough high plain of the central lands. This high plain is bordered all along the Pacific Coast by parallel ranges of low mountains thickly set with active volcanoes. It rises from the low plain in the north-west of Yucatan peninsula, extends through the whole eastern outcurve, and descends to a broad swampy low plain along the Mosquito Coast. Here a wide valley runs diagonally across from the Caribbean Sea to the great Lake Nicaragua close to the Pacific. South of this



valley the land once more rises into a high mountainous belt full of active volcanoes, but the range gradually sinks to the low hills of the isthmus of Panama. The Central American rivers, although not very long, have a great volume of water in the summer or rainy season when the north-east trade winds bring deluges of rain to the Atlantic coasts.

**434. Plants.**—The latitude being the same as that of the south of India the heat is intense, and vegetation is luxuriant. Forests cover almost the whole land, full of large trees and beautiful flowers, and tangled together by creeping plants. Objectionable insects of all kinds abound, both in the woods and in the towns. Plantations of **sugar-cane** are usually formed on the hot low-lying grounds; **coffee-trees** cover the lower mountain slopes; **cattle** are pastured on the highest ground, and **maize** is grown everywhere, the rich soil and suitable climate often yielding as many as three crops in the year. Yet only a small part of this fertile region is turned to account.

**435. People.**—The present inhabitants of Central America resemble those of Mexico in many ways, native Indians and Mestizos or half-breeds being much more numerous than the whites of Spanish descent. The whole of Central America was once a Spanish colony. Part of Yucatan peninsula now belongs politically to Mexico in North America, the whole isthmus of Panama belongs to Colombia in South America, and British Honduras is a colony. All the rest of Central America, when it became independent of Spain, formed a confederated republic, which soon split up into five small republics, and these are more quarrelsome and more subject to revolutions than any other countries in the world.

**436. BRITISH HONDURAS** or *Belize*, on the east coast of Yucatan along the Bay of Honduras, is a Crown colony which was founded and is kept up almost entirely for the **mahogany** and **logwood** cut in the dense forests. Gangs of woodcutters go out in the dry season to search for and fell the scattered mahogany trees, the trunks of which are roughly squared into logs, carted to the nearest river, and floated down to the sea by the

floods of the next rainy season. The one little town is **Belize** at the mouth of the river of the same name.

**437. GUATEMALA** republic is bounded on the east by British Honduras, the head of the Gulf of Honduras, and the Honduras republic, on the north and west by Mexico, and on the south by the Pacific Coast and the republic of Salvador. Most of the country lies on the high plain, and has thus an agreeable climate, and its scenery is marvellously beautiful. From **SAN JOSÉ**, a small seaport on the Pacific, a railway runs through tropical plantations and thick forests past the pretty little town of **ESCUINTLA** to the capital **New Guatemala** (60), 70 miles inland on the high plain. This is a town of low white houses like those of Mexico. **OLD GUATEMALA** is more picturesquely situated, being built at the foot of two grand volcanic mountains. These are named *Fuegia* (Fire), and *Agua* (Water), as one throws out lava and the other boiling water. The town was deserted as the capital on account of frequent eruptions and earthquakes.

**438. SALVADOR**, the smallest American republic, runs along the Pacific Coast for 150 miles from the boundary of Guatemala to the island-studded Gulf of Fonseca, and extends inland for 50 miles over the low coast range of volcanic mountains to the higher parallel chain which bounds the high plain. **Indigo** of remarkably fine quality is the chief export. Revolutions are continually occurring, but earthquakes are still more common, and the capital, **San Salvador**, has been shaken to pieces many times. A road leads down from the height on which this city stands to **LIBERTAD**, the chief port.

**439. HONDURAS** republic occupies the whole northern half of the eastern outcurve along the southern shore of the Bay of Honduras. A mountain range, forming a complete watershed, stretches from the Gulf of Fonseca to a point near Cape Gracias a Dios, and separates this republic from **Nicaragua** on the south. Honduras comprises a large eastern and a smaller western mass of mountains separated by the central plain of **Comayagua**, and by valleys which run from it to north and south. The Government borrowed several million pounds in order to make a railway to join the Atlantic and Pacific through this hollow, but never

did the work ; and, like most of the Spanish-speaking republics, is not able to pay back the money. **Cattle** of an unusually fine breed are fed on the upland pastures, and these, with forest produce, such as mahogany and indiarubber, are the chief exports. The seaports of **TRUXILLO**, on the Caribbean Sea, and **AMAPALA**, on the fine Pacific harbour of the Gulf of Fonseca, have a little trade. **Tegucigalpa** (10), the capital, and **COMAYAGUA**, on the central plain, are the only towns of any size.

**440. NICARAGUA** occupies the whole southern half of the eastern outcurve. The Mosquito coast, facing the Caribbean Sea, is an impenetrable mass of tropical forest, the native Indian dwellers in which still profess to be independent, and have a king of their own ; this claim was for many years supported by the British Government, but the protection has been withdrawn. Gold-fields are being worked on the Atlantic slope. Along the central uplands there are great grassy plains used for cattle-breeding. In the west, between the lakes and the Pacific, the valleys are laid out in plantations of sugar, coffee, cacao, and tobacco, the soil being rich on account of the volcanic rocks under it. The old capital, **LEON**, in the north-west, is surrounded by active volcanoes, the eruptions of which have repeatedly destroyed it. It is now superseded by **Managua** (20), built on the slope of another volcano on the margin of Lake Managua. This lake overflows southward by a short river into the larger Lake Nicaragua, 90 miles in length and 40 wide. It is diversified by several beautiful mountainous islands, on the shores of which alligators bask open-jawed in the sunlight, and fresh-water sharks glide through the still water on the watch for bathers. The old brick-built town of **GRANADA**, near the north-west shore of this lake, is the largest in the republic. Although at one point only 15 miles from the Pacific, Lake Nicaragua has its outlet to the Caribbean Sea by the deep San Juan River, 100 miles long. It is proposed to unite the Atlantic and Pacific by a ship-canal from **GREYTOWN** at the mouth of this river, the great lake being part of the waterway (compare Panama Canal, § 468).

**441. COSTA RICA** extends from Nicaragua and the San

Juan to the boundary of Colombia. Some of its active volcanoes tower to the height of 12,000 feet, rising from unexplored tracts of tropical forest. It was called Costa Rica (*i.e.* *Rich Coast*) by the Spaniards, who hoped to find gold there; but gold-mines have only recently been opened, and the country is often known as the Coffee Republic, from its chief export. The people are as a whole more cultivated and more energetic than in other Central American states. The capital, San José (20), on the western slope of the central range, has a railway passing CARTAGO, the next town in importance, and across the mountains eastward to the port of LIMÓN on the Caribbean Sea. The chief Pacific port is PUNTARENAS (*i.e.* *Sandy Point*), on the north-running Gulf of Nicoya.

#### THE WEST INDIES.

**442. Name and Divisions.**—The name *West Indies* keeps up the mistake Columbus made in 1492, when he first sighted Watling Island in the Bahamas and supposed he had sailed round the world to India. They are also known as the *Antilles*, because the map-makers of the Middle Ages used to mark an island called Antillia to fill up the unknown region in the west. The islands rise on the curved ridge which separates the deep basins of the Gulf of Mexico and of the Caribbean Sea from the Atlantic Ocean, like a set of stepping-stones between North and South America. They form four natural groups: (1) The **Greater Antilles**, comprising the four long mountainous islands of *Cuba*, *Haiti*, *Puerto Rico*, and *Jamaica*, running from west to east between the tropic of Cancer and 18° N.; (2) the low coral-built **Bahamas**, to the north of these; (3) the **Lesser Antilles** (or Windward Islands), about twenty small islands, 30 or 40 miles apart, sweeping in a graceful curve from Puerto Rico to near Trinidad (§ 512); (4) the **Leeward Islands**,<sup>1</sup> a chain of islets running parallel to the north coast of South America.

**443. Climate and Plants.**—Though tempered by breezes

<sup>1</sup> The names Windward and Leeward Islands are applied to different groups of the West Indies by various writers, the British colonies in the north of the Lesser Antilles are officially called leeward, those in the south windward.

from the surrounding sea, the West Indies are extremely hot on the low coast plains, where the inhabitants suffer greatly from fever, but the weather is delightfully mild all the year round on the higher ground. Nowhere else is the sea so clear, or the shells and fishes so brilliant. There are two seasons following each other regularly : the **rainy season**, from May to November, when scarcely a day passes without heavy showers ; and the **dry season** for the rest of the year, with the sun shining from a cloudless sky. As the West Indies are so near the equator, the length of day and night remains nearly the same all the year. Terrific **hurricanes** or cyclones of small size, but accompanied by the most furious wind, occasionally sweep over the islands, doing great damage ; houses are unroofed or blown completely away, forests are rooted up, and the sea becomes so tempestuous that the waves often overwhelm the ships at anchor, or break their cables and throw the vessels far inland.

Plants grow with all the variety and richness of the tropics ; the **fruits**, such as bananas, pine-apples, and guavas, are particularly delicious ; and **plantations** of sugar, coffee, cacao, tobacco, and cotton are laid out in most of the islands.

**444. People.**—The original inhabitants of the northern groups, a gentle and peaceable race, were exterminated by the cruelty of the Spanish conquerors. The fierce *Caribs* (§ 505) of the south were daring sailors and pirates, but after much fighting were driven across to South America ; and **Negro** slaves were taken from Africa to work the plantations. By conquest and colonisation most of the maritime countries of Europe have obtained possessions in the West Indies. When the British Parliament abolished slavery in 1834, £20,000,000 were paid to the slave-owners of the British West Indies as compensation for their loss. But the freed negroes would not continue to work steadily, preferring to settle on a little plot of ground of their own and grow a little maize and a few bananas, which kept them alive and contented. *Coolies* from India and China are accordingly brought in to keep the plantations going ; but the West Indies have never become so prosperous as they were in the old slave days.

**445. CUBA**, the most beautiful land on earth, according to Columbus, is a long narrow island about half the size of Britain. Although surrounded by labyrinths of coral reefs, it has half a dozen safe and accessible harbours. Its western end, Cape San Antonia, lies 130 miles east of Yucatan, and the north coast is about the same distance south of Florida, so that all vessels entering the Gulf of Mexico must pass close to one coast or the other. The lofty Sierra Maestra, a mountain range containing copper-mines, runs close along the south-east coast. The centre of the island is an undulating hilly region, but the south-west is a great level plain, across which railways can be so easily made that they already form a network connecting a number of populous towns. The sugar plantations of this district produce more sugar for export than any other country, and the tobacco, which covers much of the ground, is famous everywhere. Habana (230), in the north-west, is a fine city, with wide tree-shaded avenues running through it. Its name means *the haven*, on account of its splendid harbour. The tomb of Columbus has an honoured place in the cathedral. One of the chief industries is cigar-making, for which there are hundreds of factories. SANTIAGO, at the east end, is also a large town and good harbour. Cuba is still a Spanish colony, forming, with the smaller island of *Puerto Rico*, farther to the east, the sole relics of the great Spanish American possessions. But the whole strength of the mother country is often required to put down the revolts which are continually arising.

**446.** The island of **Haiti** (*i.e. Land of High Hills*) is about the size of Scotland. Its narrow eastern extremity is separated from Puerto Rico by the deep Mona Channel, through which most steamers enter the Caribbean Sea. The island becomes wider towards the west, and ends in two long west-pointing peninsulas. The northern peninsula is separated by the Windward Channel from Cuba, the southern one points towards Jamaica. Columbus gave the name of *Vega Real*, or the Royal Plain, to the fertile valley that occupies the centre of the island, but to this day the land has never been cultivated. The French got possession of the west end of the island a hundred years

ago, but the African slaves who made up most of the population drove them out. A negro kingdom was set up, which has now become the Republic of **HAITI**, a republic in which no white man is allowed to have a vote. The population is almost entirely composed of pure negroes; many of them are fetish worshippers, and the rest degraded Roman Catholics, speaking a dialect of French. **Port-au-Prince** (50), on the bay between the long peninsulas, is the chief port and capital. The eastern and larger part of the island forms the Republic of **SAN DOMINGO**, peopled almost exclusively by Spanish-speaking mulattos, but these are even more lazy than the Haitians. The capital, **San Domingo** (20), on the south coast, is the oldest town built by Europeans in America, as it was founded in 1496 by the Spanish adventurers.

**447. JAMAICA** (*i.e. Land of Springs*) is one of the finest tropical islands in the world. The low plains of the coast, where sugar grows, are watered by innumerable streams. These descend from the wooded slopes of the Blue Mountains, which run along the centre of the island from east to west. **Sugar** and **rum** were long the chief products; but delicate **fruits** sent fresh to Europe and the United States are becoming more important every year, and **coffee**, **pimento** (or *allspice*), and hard woods from the forests are largely exported. There are half a million happy lazy negroes on the island, working just as little as is necessary to keep them in food and clothing, and in this fortunate country that is not much. The Government officials and merchants are mainly of British origin, but only number 14,000, and the really hard-working classes are the **negroes** from **China** and **India**, who toil in the plantations. **Jamaica** is a colony governed like Western Australia, and is the largest of the British West Indies. The capital and chief trading port is **Kingston** (40), on the land-locked harbour of **PORT ROYAL** in the south-east. A railway runs to **SPANISH TOWN**, the former capital, 10 miles westward, and continues for some distance into the interior amongst the sugar-fields. Small but active harbours are scattered along the coast—**SAVANNAH-LA-MAR** in the south-west, **FALMOUTH** and **ST. ANN'S** on the north, being the most important.

**448.** The **BAHAMAS** form one British colony and comprise twenty coral islands, more than 500 islets, called *cays* or *keys*, and thousands of still smaller reefs. The Gulf Stream flows northward between the group and Florida peninsula. **Fruit** (especially pine-apples), **cotton**, and **sponges** dredged from the warm, clear lagoons, are collected for export at the sleepy little capital, **Nassau**, on the island of New Providence. Nassau had a time of extraordinary but short-lived prosperity during the American Civil War, when hundreds of vessels visited its harbour. The daring blockade-runners who forced their way into the ports of the southern states, when these were blockaded by the northern fleet, made it their headquarters.

**449.** The **Lesser Antilles**.—Almost all the lesser Antilles are volcanic islands, sometimes a single cone, in other cases a group of peaks shooting up from a fringe of coral banks and reefs. On the eastern side the waves, urged by the steady trade winds, heap up a broad beach of coral sand; but the west coast is usually steep with rocky inlets, where there are deep harbours. Hence it happens that in each of these islands the chief town and seaport is on the west. The chain begins in the small group of the *Virgin Islands* lying east of Puerto Rico. Some of these are British possessions, but the most important is barren **ST. THOMAS**, belonging to Denmark. Its central position and grand harbour have made it a meeting-place of the telegraph cables which string together all the islands of the West Indies, like a row of pearls on a thread, and it is also a centre of steamer traffic with Europe. It is sometimes visited with disastrous hurricanes and earthquakes, and in dry seasons not only food but drinking water must be imported. South of the Virgin group lie the islands forming the British colony called the **LEEWARD ISLANDS**; their names are **Anguilla** (i.e. *Little Snake*, from its winding form); **St. Christopher**, usually shortened to **St. Kitts**, **Barbuda**, **Nevis**, **Antigua**, and **Montserrat**, the last being famous for its lime fruits and the cordial made from them. **GUADELOUPE**, a French possession, comes next. It is a double island, united by an isthmus, across which a river of sea-water flows as the tide rises.



**Dominica**, one of the British Leeward Islands, separates it from another French possession, beautiful mountainous **MARTINIQUE**. Here the negroes have adopted the French language and habits, are bright in manner, tasteful in dress, and, unlike most of their race, as careful and clean both in person and premises as the Dutch are in Holland.

The rest of the long chain forms the British **WINDWARD ISLANDS**. This colony includes **St. Lucia**, **St. Vincent**, the little group of the **Grenadines**, and finally **Grenada**, all rising from the same shallow ridge, which is separated by a wide and deep channel from Trinidad.

**450. BARBADOES**, a separate British colony 80 miles east of St. Vincent, suffered least in the West Indies when its slaves were freed, because there were so many negroes on the little island, that they had to continue at hard work in order to make a living. Nearly the whole land waves with the feathery leaves of the **sugar-cane**, and the smoking chimneys of boiling-houses, where the juice is evaporated, mark the centre of each planter's domain, as threshing-mills do the farm-steadings in Europe. Negro fishermen, working in the shallow lagoons round the island, catch quantities of **flying fish**, which are salted and exported to the other islands. Barbadoes was the first British possession in the West Indies, and when the early settlers came they found a rough native bridge across a stream, where they built their village, and thus the capital and its name of **Bridgetown** (20) had their origin in 1628.

**451.** The Dutch island **CURAÇOA** has given its name to a strong alcoholic *liqueur*, which is flavoured with its oranges. It lies off the Gulf of Maracaybo, and is the best known of the Leeward Islands which line the Venezuelar coast.



FIG. 22.—ON THE AMAZON. TROPICAL VEGETATION.

## CHAPTER XXI

### THE CONTINENT OF SOUTH AMERICA

**452. Form and Size.**—The great continent of South America, which lies on the whole to the east as well as to the south of North America, has an irregular triangular form, and measures 4800 miles from its northernmost point at Cape Gallinas ( $13^{\circ}$  N.) to the southernmost of its connected islands at Cape Horn ( $56^{\circ}$  S.), and 3300 miles from Cape St. Roque ( $35^{\circ}$  W.) on the east to Point Parina ( $82^{\circ}$  W.) on the west at the widest part. If we omit the tapering part of the continent south of the La Plata estuary, the outline of the continent appears very like a man's head, the isthmus of Panama representing a single tuft of hair, the mouth of the Amazon the eye, Cape St. Roque the tip of the nose, Cape Frio the chin, and the small outcurve, farther south, the "Adam's apple" of the throat.

**453. Caribbean Coast.**—The low isthmus of Panama, in  $9^{\circ}$  N. and  $80^{\circ}$  W., which joins South to Central America, is less than 50 miles wide. From this point the coast, after bending southward in the Gulf of Darien, runs north-eastward to Cape Gallinas, is cut into by the long gulf and sea-lake of Maracaybo, and then trends south-eastward, the island of **Trinidad** lying on the continental shelf east of the narrow peninsula of Paria.

**454. Atlantic Coast.**—The wide delta of the Orinoco, just south of Trinidad, commences a tract of featureless mangrove-covered mud banks which stretch for 1000 miles to the huge mouth of the Amazon on the equator in long.  $50^{\circ}$  W. The next thousand miles of coast continue south-eastward to the rocky Cape St. Roque and to Cape Branco, the most easterly point in America. Here the coast turns and runs on the whole south-westward for 4000 miles. At first it forms long, gentle outcurves and incurves beneath a mountain wall broken by some fine harbours, but by no long rivers. Then it becomes edged with lagoons separated from the sea by great sand-bars. After the wide shallow estuary of the La Plata in  $35^{\circ}$  S., its character changes, and abrupt gulfs and capes succeed each other along a flat shingly beach. The Strait of Magellan separates the southerly tip of the continent from the main mass, and is characterised by steep bare cliffs rising abruptly from the sea. The group of islands is called *Tierra del Fuego*, or Land of Fires, because the natives always keep a fire burning in their canoes. This group curls south-eastward,\* ending in the narrow Staten Island. Here the continental shelf is widest, for it stretches eastward for 500 miles, bearing the **Falkland Island** group near its outer edge.

**455. Pacific Coast.**—The south coast of *Tierra del Fuego* is broken by innumerable channels and wild rocky islands. The southernmost promontory, Cape Horn, is beaten upon by the huge waves of the Southern Ocean, and wreathed for ever in mist or driving snow. For 1200 miles thence to the north a chain of rocky islands borders the steep and much-indented shore, separated only by narrow channels. From the northmost island, Chiloe, in  $42^{\circ}$  S., the coast runs due north as a line of

cliffs in which a few small safe bays are sheltered by bold headlands, and a few short streams enter from the steep slope of the Andes. In lat.  $18^{\circ}$  S. a wide western outcurve commences, and the lofty mountain chain approaches closer to the sea. North of Point Parina, which is the most westerly point, the large Gulf of Guayaquil and innumerable smaller bays eat into the coast-line which sweeps round into the damp, hot, and luxuriantly tree-clad Gulf of Panama.

**456. Configuration: The Andes Region.**—The backbone of South America is formed by the long chains or *Cordilleras* (see § 423) of the Andes, extending without a break along the entire west coast. Nowhere else in the world is there such a uniformly high and unbroken mountain wall as the seaward range presents. Although it is not so high as the Himalayas, the length is much greater. There are a dozen peaks nearly or quite 4 miles in height. In lat.  $18^{\circ}$  S., where the abrupt westward outcurve of the west coast commences, the Andes form a double snow-tipped chain, and surround the wide **Titicaca high plain**, which is more than 2 miles above the sea, and contains the large Lake Titicaca, without outlet. The two ranges unite south of this plateau, and become lower, as they run southward in a single ridge, on which the highest summit **Aconcagua** raises its snowy cone nearly  $4\frac{1}{2}$  miles (23,000 feet) above the sea. North of the Titicaca high plain the eastern ridge splits into several ranges. The **Cauca** River, flowing northward in a long valley between the two coast ranges, joins the larger **Magdalena** which is formed in a wider valley, and enclosed on the east by a great range curving north-eastward. This range, passing just south of the Gulf of Maracaybo, merges into the low north coast range which ends at Cape Paria. The Andes region is largely composed of comparatively recent sedimentary rocks pierced and overtopped by the lava of numerous active and innumerable extinct volcanoes which occur all along the line. Earthquakes are of such continual occurrence that, except when very severe, they are hardly noticed by the inhabitants. The eastward terraced slope of the Andes, cleft by vast gorges, sinks steeply to a narrow-low plain travers-

ing the whole continent from north to south, which swells up towards the east into two separate high plains of moderate elevation.

**457. Guiana Plateau.** - The smaller of these high plains is called the 'Plateau of Guiana, and extends eastward to the Atlantic, just north of the equator. It is ridged by the **Sierra Parime** near the centre, and the **Sierra Acaray** on the southern edge. These form the watershed, the land dipping on the north to the **llanos**, or broad, flat, tree-dotted plain of the **Orinoco**, and on the south to that of the Amazon. At one place there is no watershed, for the Orinoco is joined by the **Cassiquiare**, a natural navigable canal to the Rio Negro, which is the chief northern tributary of the Amazon.

**458. The Amazon** or *Maranon*, the greatest river in the world, is nearly 4000 miles long, measuring from its farthest source high up in the Andes within 30 miles of the Pacific. For the 300 miles next its mouth the breadth varies from 3 to 30 miles. Its drainage area is 2,500,000 square miles, more than half of which is perfectly flat land, covered with a continuous tangled mass of tropical forest—the **selvas** or woods. The river and its great tributaries afford more than 25,000 miles of waterway, along which steamers can travel, and they are the only pathways through these tangled forests. The tide is felt 500 miles from the mouth, and often rushes up as a destructive bore, called by the natives *Amassonas* or boat-breakers. The river did not get its name from this word however, but from the warlike women (like the classical Amazons), seen on its banks by the first explorers. In floods the muddy water discolours and freshens the deep blue ocean for 200 miles from the river-mouth, far out of sight of land.

**459. Brazil Plateau.**—The whole eastern projection of the continent is occupied by the high plain of Brazil, a mass of ancient rock cut into irregular mountain ridges, often called the **Brazilian Alps**, with wide valleys occupied by large rivers between them. This forms a great watershed, but only one of its long north-flowing rivers, the **São Francisco**, turns eastward, and reaches the sea as a separate stream. All the others

flow to the Amazon. Those much more than 1000 miles in length are the **Tocantins** (with its tributary, the **Araguay**), the **Xingu**, the **Tapajos**, and the **Madeira** (which is also fed by large tributaries from the eastern Andes). Except the **Madeira**, these great rivers cannot be freely used by steamers, as there are waterfalls or rapids where they descend the steep slope at the edge of the high plain, a few hundred miles from their mouths.

**460. The La Plata System.**—Other streams flow down the gentle western slopes of the Brazilian high plain, and turn southward in the narrow low plain at the foot of the eastern terraces of the Andes. The northern part of this low plain is the wooded **Gran Chaco** (*i.e. Great Hunting Ground*), the southern part is called the **pampas**, which are treeless tracts covered with tall grass and brilliant flowers. The **Parana** and **Paraguay**, the two longest rivers of this plain, meet as they flow southward, and after receiving the **Pilcomayo**, **Vermejo**, and **Salado**, from the Andes, turn eastward. The united stream is then joined by the **Uruguay** from the south slope of the Brazilian Plateau, and enters the sea through the estuary of **La Plata**, which pours out more water than any other river in the world except the Amazon and the Congo. A canal a few miles long would join the southern navigable tributaries of the Amazon with the northern navigable tributaries of the Paraguay, and the watershed between the two is very low. Two long rivers fed by the Andes snows, the **Rio Colorado** (*i.e. Coloured River*) and **Rio Negro** (*i.e. Black River*), flow across the plains into the Atlantic about 40° S.

**461. Climate.**—The position and configuration of the continent account for its climate. The wider and much the larger part lies within the tropics, the low ground, therefore, is intensely hot. The north-east trade wind blows right up the valleys of the Amazon and Orinoco during the months of June, July, and August, giving rise to a remarkably heavy rainfall; but in November, December, and January the north-east trade is shifted farther north, and a hot dry season is experienced. The south-east trade wind gives rainfall all the year

to the Brazilian Alps between Cape St. Roque and the La Plata estuary, so that the eastern plains are well watered. The western slope of the Andes north of 30° S. is almost rainless, as the mountains stop the trade winds and the monsoons are feeble. A little farther south, the "roaring forties" blow steadily from the west across the cooler and narrower part of the continent, and give abundant rain to the western slope of the southern Andes while the east remains dry. The climate in the extreme south varies little in its temperature with the season, the summers are warm though not hot, and the winters, though chilly, are seldom cold. The higher towns on the Andes, even under the equator, are cool from their great altitude.

**462. Resources.**—The mineral wealth of this continent is chiefly silver and copper, which abound on the western slopes of the Andes. Coal occurs in several places though not abundantly. Gold and diamonds are very important on the Brazilian High Plain. The continent forms a special realm of animal and plant life which has been described in § 66. The Spaniards introduced horses, cattle and sheep, and these thrive so well on their new pastures that now there are many millions of them. Thousands of horses and cattle have become completely wild, and roam in herds over the plains.

**463. Original People.**—The original inhabitants are people of the Yellow type, similar in race to those of North America, and forming a great number of tribes. The people of the Selvas and of some other parts have always been, and are still, degraded savages, but most of the tribes have many fine characteristics. The natives of the southern plains have become expert horsemen, and are skilled in the use of weapons. They employ the *lasso* or noose, and the *bolos*, two metal balls attached to a long cord, by which the largest animals, when run down on horseback, can be caught or killed. Bows and arrows are still the chief weapons of the less civilised tribes, and the people of the selvas hunt with the blowpipe. This is a long wooden tube with a smooth and even bore, through which small arrows, with poisoned tips, are blown to a good distance, and hit hard enough to kill birds and monkeys.

On the cool high plains of the Andes a remarkable native civilisation, similar to that of the Aztecs in Mexico, and like it destroyed by the Spaniards, came to perfection 500 years ago. The Empire of the Incas, the ancient Peruvian emperors, extended over nearly the whole length of the Cordilleras, the great cities being built of huge blocks of stone in deep cliff-girdled mountain valleys. They had never seen iron, but used bronze for tools and weapons, while gold and silver were plentiful enough to be made into dishes and cups for daily use. Roads as solid as those of the Romans were constructed for thousands of miles over the most difficult mountain passes, along the face of precipices, and by bridges across tremendous gorges. Aqueducts brought fresh water into the great cities, which were strongly walled and full of grand palaces and temples. The people were a noble and generous race, who worshipped the sun as the chief power in the world, and their Inca, although a despotic monarch, ruled his great dominions firmly but kindly. The llama and alpaca were domestic animals used as beasts of burden and for their wool. Writing had not been invented, but messages were sent by means of bunches of thread knotted in a peculiar way, and records of history were kept by hieroglyphs carved on the rocks.

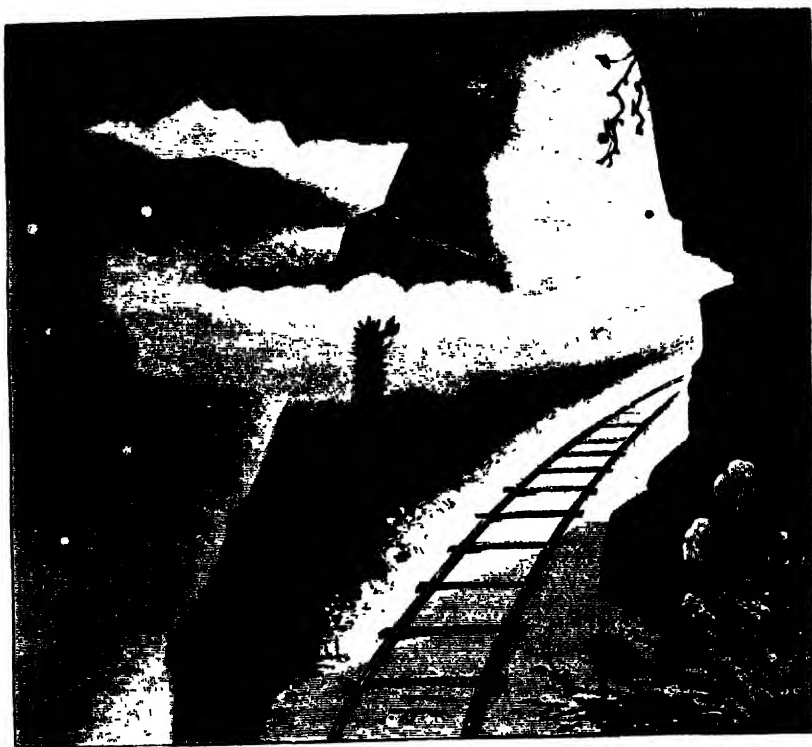
464. **History.**—In 1498 Columbus reached the mouth of the Orinoco, and reasoning that so great a volume of fresh water could only flow from a vast continent, he was the first European to prove the existence of South America. Spanish settlements were made at once on the east coast, and ten years later negro slaves were brought from Africa for the new plantations, as the native Indians could not be got to work. In 1513 the Spaniard Balbao, crossing the isthmus of Darien, was the first European to see the Pacific Ocean, which was entered seven years later by Magellan through the strait that bears his name. The civilised people of the western Andes treated their European visitors with the greatest kindness, but the sight of the splendid cities and vast stores of gold tempted the Spaniards beyond their power to resist, and the *conquistador* (or conqueror) Pizarro treacherously murdered the Inca, defeated the army by means



of horsemen and firearms, and took possession of the country. While the Spaniards settled on the north and west coasts, the Portuguese came to the east and founded the colony of Brazil. Both races were zealous Roman Catholics, which accounts for so many of the present names of places on the continent being those of saints. The common name Santiago, for instance, is the Spanish form of St. James the patron saint of Spain. In 1635 the French settled in Guiana or Cayenne on the north-east coast, and the Dutch and British followed the example, setting up small colonies. Except these, the whole continent was governed by the people of the Iberian peninsula. So it continued until 1810, when most of the Spanish colonies revolted, and under the leadership of Bolivar, "the Liberator," became independent republics after a desperate struggle of more than ten years. The Portuguese colony of Brazil became a kingdom in 1815, and then an empire by a bloodless revolution. Countries in South America very often change their boundaries, as there are often wars and revolutions, of which little is heard in Europe; indeed, in many of the Republics, a wild fight in the streets of the capital is as common a way of changing the government as a dissolution of parliament.

**465. Present People.**—The people who now occupy South America belong mainly to three pure and three mixed races, exactly as in Mexico (§ 431). They are all characterised by strong passions; they love war and change, and are often treacherous and cruel. The religion is almost everywhere Roman Catholic, and many of the priests are Mestizos or even pure Indians. Unlike the Teutonic colonists of North America, the Romanic colonists of South America have greatly degenerated.

With few exceptions the republics are deeply and almost hopelessly in debt, so that public works are carried on very slowly, and foreign business men are not willing to invest money in their mines or railways. A telegraph cable is laid along both the east and the west coasts of South America, being landed at each of the chief seaports, and connected with the short land lines radiating from these.



• FIG. 23.—ON THE LIMA AND OROYA RAILWAY. AMONG THE CLOUDS.

## CHAPTER XXII

### WESTERN COUNTRIES OF SOUTH AMERICA

#### COLOMBIA.

466. The country **COLOMBIA**, named after the great Columbus, has been changing like the figures of a kaleidoscope since it became free from Spain in 1819. Then it included the whole north-west of the continent, but in 1832 Venezuela split off on the east, and Ecuador on the south, leaving the north-western region, four times the area of the United Kingdom, as the republic of Granada. This, after several revolutions, formed

itself into a confederation of nine separate republics governed like the United States, with the name of United States of Colombia; but by a revolution in 1886 these were reduced to mere provinces of the one Republic of Colombia, which now resembles France in its mode of government. Education is unusually well looked after in this state, and there is no established church, but complete religious freedom, a rare thing in South America.

**467. Boundaries and Surface.**—The republic covers the isthmus of Panama, is bounded on the west by the harbourless Pacific coast. On the south the frontier zigzags across the equator as far as the Rio Negro, turns north along the meridian of 69° W. over the llanos, and finally curves in a sickle shape across the eastern Cordillera, and runs west of the Gulf of Maracaybo to Cape Gallinas on the Caribbean Sea. Colombia thus includes the three lofty, and therefore cool, northern ranges into which the Andes split, with long, fertile, and intensely hot valleys between them, down which three navigable rivers, the Atrato, Cauca, and Magdalena, flow northward. On the north coast, close to the eastern boundary, the short isolated range called *Sierra Nevada de Santa Marta* (snowy heights of St. Martha) rises to a high and inaccessible peak.

The productions of Colombia are mainly silver from the mountain mines, and coffee languidly cultivated in the hot valleys.

**468. Towns of Colombia.**—ASPENWALL (called after the United States merchant who founded it, but also named *Colon*, the Spanish form of Columbus) is a little port on the Caribbean Sea, joined by 47 miles of railway across the hot and unhealthy isthmus to PANAMA, an old Spanish harbour on the Pacific. The famous *Panama hats*, each plaited from the fibres of a single palm leaf, are made by negroes, who take a whole year to make one of the best kind. A canal, alongside the railway, to allow the largest steamers to pass freely between the Atlantic and Pacific, was commenced by a French company in 1881; but the work proved of vast difficulty, millions of pounds have been spent, and the canal remains unfinished in 1889. The mouth of the Magdalena has a shallow bar, so the chief seaport on the Carib-

bean Sea is SAVANILLA, a few miles to the west, from which a railway runs 20 miles south-east to BARANQUILLA, the chief commercial town, in a gorge of the Magdalena. Steamers run thence 500 miles up the river to HONDO, whence a road, or rather path, 60 miles long, winds up the eastern Cordillera to Bogotá (100), the capital, on a small plain more than 1½ mile above the sea, and surrounded by mountains. Everything as yet must be carried up on the backs of mules, but a railway is being made. The town is full of churches and fine houses, though the latter are only one story high and have few glass windows on account of earthquakes. The climate is delightful, the soil yields rich crops of wheat and pasture grass, and the scenery is grand. The river which drains the plain tumbles over the edge as the famous Fall of Tequendama in one leap of 600 feet through a wild gorge, to join the Magdalena.

#### ECUADOR.

**469. Area and Surface.**—**ECUADOR**, occupying a slice of country 200 miles wide running eastward for 800 miles between Colombia and Peru, takes its name from the Spanish word for *equator*, as that geographical line traverses the north of the republic. It is twice the size of the United Kingdom, but only the mountainous strip on the west is settled. Wild Indians roam undisturbed on the densely wooded slopes watered by the great navigable rivers Japura, Putumayo, and Napo, flowing to the Amazon. The Andes in Ecuador consist of a lofty double chain with a level valley less than 20 miles wide lying between the ridges. This valley is more than 8000 feet above the sea, and has a fine spring-like climate all the year; but no trees grow in it. On the eastern ridge three huge snowy peaks rise close together to a height of over 19,000 feet. These are **Cayambe**, just on the equator, at the boundary with Colombia; **Antisana**, south of it; and a few miles farther south **Ootopaxi**, the grandest volcano in the world, as perfect in shape as if turned in a lathe, with its ever-active crater five times as high as that of Vesuvius. No South American has climbed this almost

inaccessible mountain ; but in 1880 Mr. Whympcr, an Englishman, aided by two mountaineers whom he had brought from Switzerland on purpose, succeeded with infinite trouble in reaching the summit. Still farther south, and in the western range, the "silver-bell" of **Chimborazo** rises with such majestic grandeur into the deep indigo blue sky that it was long believed to be the highest mountain in the world, but when climbed it was found only to reach 20,000 feet.

**470. Towns of Ecuador.**—Ecuador has long been ruled by Roman Catholic priests, rather than by its president and parliament. No other religion is tolerated, but education is well looked after, and only those who are able to read and write are allowed to vote. The chief export from the republic is **cocoa**, the seeds of the cacao tree, which forms the favourite beverage of Spaniards. In **GUAYAQUIL**, the chief seaport, all the houses and even the churches and their spires are built of bamboos bound with leather thongs and plastered with mud, these elastic walls being safe from earthquakes, which shake the place continually. A few short railways have been constructed, but the journey of 250 miles from the coast to the capital occupies about a week. It is done partly by steamer up the river Guayas, between plantations of cacao trees, then by a mountain road winding round the base of Chimborazo, through forests, where cinchona trees, yielding the finest quinine, are felled ; and over the western ridge to the high valley which shelters **Quito** (100), "the city above the clouds." The town is a perfect square, and one-fourth of it is covered with fine churches and huge convents, the rest with neglected-looking streets of small houses occupied by a lazy and slovenly people. The fruit market supplied from the tropical plains is one of the wonders of the place. **CUENCA**, built of sun-dried bricks on the banks of the tributary of the Amazon rising nearest the Pacific, in the same long valley but near the southern frontier, is one of the most isolated towns of civilised people in the world.

**471. The Galápagos or Tortoise Islands**, a volcanic group intersected by the equator, lie in the Pacific, about 600 miles to the west, and belong politically to Ecuador. The great land

tortoises, the birds, and sea-turtles which frequent them are all peculiar to the place, and are quite different from the kinds which are found on the neighbouring continent.

### PERU.

**472. Area and Surface.**—PERU became a free republic in 1824, but its area, now four times that of the United Kingdom, was once much larger. The last war with Chile in 1880 lost it the guano-yielding province of *Tarapaca* to the south. The republic includes a broad strip of dense forest on both sides of the Amazon as far as 70° W., bounded on the north by Ecuador, and on the south-east by the Yavari River from Brazil. An artificial line, drawn at first parallel to the coast, and then striking due south across the eastern Andes and the middle of Lake Titicaca, separates it from Bolivia to the east, and a short river in 19° S. is the boundary from Chile to the south. The long valleys sloping northward, like great grooves from the high plain of Titicaca (the Tibet of America), are traversed by rivers. Amongst them is the Amazon itself, which rises in 10° S., and after flowing north for 400 miles, swerves through a valley to the east, and reaches the wooded low plain. Here it is joined by the Napo from Ecuador, and the winding Huallaga and Ucayale from the south, which rush down the steep gorges of the eastern Andes slopes, and are navigable by steamers from the Amazon to the base of the mountains, not 300 miles from the Pacific. The high grassy plains of the Andes are known as *Punas*. The eastern slope is called the *Montanas* (or Mountains), and its thick hot woods, brilliant with flowers and birds, are the natural home of the cinchona, the medicinal use of which was discovered by the Jesuits, and to this day the drug is often known as Jesuits' bark or Peruvian bark.

The western Andes rise abruptly from the sea, a gray baked pile of rock ascending grandly to the gray clouds from which rain never falls, but which break now and then, showing peak behind peak of gleaming snow. Where the narrow desert strip of level ground along the coast is crossed by one of the rare

streams a band of bright green tropical vegetation appears, widened by artificial irrigation and the patient labour of Chinese coolies.

**473. The People of Peru** are more mixed than in any other state of South America. The great business towns are thronged by foreign merchants, chiefly British, Germans, and Italians, while lazy, good-for-nothing negroes, always on the watch for plunder and quite regardless of life, make it unsafe for a stranger to leave the widest streets. The Roman Catholic religion is alone tolerated by law. Education is compulsory, and the oldest university in America has its seat in Lima. Bad government has, however, made Peru unprosperous. Silver from the Andes mines, nitre from the rainless coast deserts, the wool of alpacas and vicunas from the high plains, and the tropical forest produce of the eastern slopes, are the main exports.

**474. Central Towns and Railways.**—CALLAO, a dirty town where flocks of birds of prey—protected by law—devour the refuse in the narrow streets, has a fine harbour, and here most of the foreign trade of the country is done. Seven miles inland by rail stands the capital Lima (100) on a rainless and fever-haunted plain, laid out like a chessboard in squares of low, flat-roofed houses of sun-dried bricks, which a heavy shower would wash away altogether. Innumerable double-towered churches break the general level, and a grand cathedral containing the tomb of its founder, Pizarro, rises in the centre of the town. A "railway in the clouds" climbs the Andes, zigzagging up the steep slopes on narrow shelves hewn out of the rock, tunnelling projecting cliffs and bridging awful gorges, in which the clouds floating far below hide the torrents from the traveller's sight. At OROYA the line turns northward and reaches the silver-mines of CERRO DE PASCO, 160 miles by rail from Lima, and 2½ miles above the sea. This is the loftiest town in the world, always bitterly cold on account of its height, and with air so rarefied that a stranger can hardly breathe.

**475. Southern Towns and Railways.**—From the little port of MOLLENDÓ, towards the south, a still more wonderful railway passes AREQUIPA at the base of a great mountain with

the same name, crosses the Andes at the height of nearly 3 miles above the sea, and descends to PUNA on the barren margin of Lake Titicaca. This vast expanse of water, far above the limit of trees, is fringed with beds of reeds, of which both houses and boats are built. Small steamers now navigate the lake, and on one of its islands there remain grand ruins of a Temple of the Sun built by the ancient Incas. From Puna the railway runs down the valley of the upper Ucayale to Cuzco on a little hill-girt plain, which, in spite of a rough cold climate, was the ancient capital of the Incas, and is still full of splendid memorials of their time. Most of the other mountain towns are reached only by tracks, up which mules or the patient little llamas carry the scanty merchandise.

#### BOLIVIA.

**476. Area and Surface.**—**BOLIVIA**, which is named after Bolivar, the liberator of South America from Spain, has an area just four times that of the United Kingdom. As the result of a long war, in which it allied itself with Peru against Chile, it has lost a little strip of the Pacific coast that it held until 1884. It is now bounded on the west by Peru and by the western Cordillera of the Andes, which separates it from Chile. On the south an irregular line, across the high plain and the parallel of 22° S. is the frontier towards the Argentine Republic and Paraguay. The south-flowing Paraguay River and the north-flowing Madeira form the eastern boundaries from Brazil. The shape of the country on the map is roughly the quadrant of a circle; the right angle rests on the salt marshes of the bare Titicaca high plain; the curve includes the north end of the Gran Chaco, which is a marshy or parched-up plain according to the season, and the south end of the Selvas watered by the Amazon. The wild ranges which buttress the high plain on the east have not yet been fully explored. Silver is the chief natural product, and llama caravans are used, as they were 1000 years ago, to carry it from the mines to the coast. Forest produce and the fur of the little chinchilla are also exported.



The **potato**, which is native to the heights of Bolivia, was taken thence to Ireland by the first English explorers of the country, who were attracted there to attack the wealthy Spanish settlements on the coast.

**477. People.**—The Bolivians, as a whole, are an idle people ; both whites and Mestizos are given to gambling and drinking, and, though they possess four universities, they are very ignorant. They have been too busy fighting to make roads or railways, but the railway lines of several other states are now close to the frontiers, and most of the trade goes either eastward through the Argentine Republic or westward by Peru or Chile.

**478. Towns of Bolivia.**—LA PAZ (60), the largest town, has narrow streets of red-tiled houses occupying a green hollow, 2 miles above the sea, in full view of the grand snowy summit of Mount Illimani to the east. A short railway westward to Lake Titicaca is joined by steamers to the terminus of the Peruvian line from the coast. COCHABAMBA, high up on the eastern slope, is a gathering place for the produce of the forests bordering the Madena ; cinchona and the stimulating coca leaves which yield the medicine called cocaine, are the chief products. ORURO, with silver-mines overlooking Lake Aullagas, and POTOSI, to the south-east, are towns over 2½ miles above the sea, well peopled on account of their great silver-mines. The Potosi mines seemed inexhaustible to the Spaniards, who discovered them 300 years ago, and though £600,000,000 worth of silver have been taken from them, they still yield abundance. When in its full glory at the end of the seventeenth century, Potosi had more than 100,000 inhabitants, but not a tenth of that number live there now. SUCRE, the capital, is a small town on the ridge which separates the Pilcomayo, flowing to the Paraguay, from the Madeira flowing to the Amazon.

#### CHILE.

**479. Area and Surface.**—CHILE (often spelled *Chili*), for nearly 500 miles southward from the borders of Peru, occupies both slopes of the western Cordillera of the Andes, this

being the territory taken from Peru and Bolivia by the war ending in 1883. But for the remaining 2000 miles the crest of the range marks the boundary from the Argentine Republic. Chile is thus merely a very long strip of country about 100 miles wide along the western slope, and its total area is only  $2\frac{1}{2}$  times that of the United Kingdom.

**480. People and Government** — In spite of being one of the smaller states of South America, it is one of the most energetic and advanced. The republican government is steady, there have been few revolutions or civil wars, education is cared for, good schools being provided at the cost of the state, and all religions are respected and protected. The strongest navy of South America and a well-disciplined army command the respect of other nations near at hand, and the good railway system enabling the natural supplies of copper, nitre, silver, wheat, and wine to reach the numerous seaports, ensures brisk trade with countries at a distance. The pure European inhabitants are patriotic, cultured, and refined, while the mixed races are compelled by the comparatively dense population and unfavourable climate to be active and persevering.

**481. Towns of Northern Chile** — Northward of  $30^{\circ}$  S. the land is a nearly rainless desert, but full of rich mines. The desert of *Atacama*, in the north, yields guano, although this is now nearly exhausted, and nitre, which is in constant demand for gunpowder-making and other purposes in Europe. These are shipped at *Iquique*, a port once in Peru, and *Antofagasta*, formerly in Bolivia. The best silver-mines are round *Copiapó*, where earthquakes hardly ever cease, and a series of short railways converging there run on to the little port of *Caldera*. *Coquimbo* (or *Serena*), a harbour in  $30^{\circ}$  S., marks the division between the deserts and the well-watered southern strip, but the coast itself remains barren far to the south.

**482. Towns of Central Chile** — A low irregular range of hills running along the shore forms a great valley at the base of the Andes, and in this valley there are fields of wheat and vineyards. Herds of sheep and cattle are pastured on the slopes, while copper is mined in the heights beyond; and the great snowy

summits, where the huge condor floats in solitude, rise over all. VALPARAISO (110, literally *Vale of Paradise*) is the greatest Pacific seaport in South America. The deep bay is surrounded by an amphitheatre of sloping cliffs, scored by a dozen of small river valleys, on which the town is built. The main street, full of fine buildings, curves round the shore, and the others rise steeply from it up the valleys. A railway due east runs through SAN FELIPE, 50 miles distant, and piercing the Andes by the longest tunnel in all America, just south of the mighty white cone of **Aconcagua**, joins the Argentine trans-continental line which extends 700 miles farther to Buenos Ayres on the La Plata. The main Chilean railway runs southward from San Felipe along the fertile valley for nearly 400 miles. The first important station is the capital **Santiago** (240), in the latitude of Sydney. Although the houses are only one story high on account of frequent earthquakes, the city contains many fine buildings, including a university, and is built round a rocky hill which serves as a public garden. **TALCA** and **CHILLON** are busy towns on the line. **CONCEPCION** at the mouth of Biobio River (the longest in Chile, 200 miles, traversing a coal-mining region) contains copper-smelting works.

**483. Southern Chile.**—The province of *Arauca*, south of *Concepcion*, was never conquered by the Spaniards, and the brave Araucanians continued to be governed by their own military chiefs until quite recently, when they became citizens of the republic of Chile. **Chiloe Island**, being well wooded and containing coal-mines, is populous; but the **Othonos Archipelago** to the south, becoming more barren and more picturesque as the climate grows colder and more blustering, is almost uninhabited. The solitary convict settlement of **PUNTA ARENAS** on Magellan Strait, except for the milder winters, resembles Siberia. In this strait an ocean post-office, similar to one in Torres Strait, has existed for many years. Ships passing through on long voyages leave letters in a box hung where it can be easily seen on a cliff, and take away any they may find addressed to the ports they are to visit.

**484.** The little island of **Juan Fernandez** lies 450 miles

---

west of Valparaiso. Here the Scottish sailor, Alexander Selkirk, whose adventures suggested the story of "Robinson Crusoe" to Defoe, was cast ashore. A monument to its famous eighteenth century inhabitant was placed on the island by the officers of H.M.S. *Challenger* in 1874.



FIG. 24.—A CATTLE FARM ON THE PAMPAS.

## CHAPTER XXIII

### EASTERN COUNTRIES OF SOUTH AMERICA .

#### THE ARGENTINE REPUBLIC.

485. The **ARGENTINE** Republic was named from the La Plata estuary (both names meaning *silver*, although no silver is found near), but it now includes almost all the pampas and the shingle deserts of *Patagonia*. The western slope of the Andes and the southern part of the wooded tropical *Gran Chaco*, noisy with innumerable chattering birds, also fall within its borders. Its area is nine times that of the United Kingdom. Chile lies to the west, beyond the mountains, and Bolivia to the north. On the north-east the Pilcomayo, the Paraguay to its confluence with the Parana, and the west flowing portion of the latter river mark off Paraguay, and on the east the Uruguay is the frontier towards Brazil and Uruguay. The general shape of the country

is that of a Turkish slipper, Tierra del Fuego forming the curled-up toe.

**486. Resources.**—The slopes of the Andes contain mines of many different metals, but these are only beginning to be worked; the wealth of the country is in the wide flat **pampas**. The solemn silence of these level seas of grass and flowers and the grandeur of the sunsets make the people living on the pampas love their country passionately. In some places thistles shoot up in spring to a height of 10 feet, forming a veritable forest; they dry and wither in summer, and are followed in autumn and winter by luxuriant clover. **Railways** can be made so easily, that sometimes for hundreds of miles there is neither a cutting nor embankment more than a yard deep or high. The natural growth of rich grass feeds vast herds of cattle and horses, and sheep have thriven so well that there are almost as many in this republic as in all Australia. In 1886 there were nearly twice as many horses, six times as many cattle, and twenty-seven times as many sheep, as there were people in the country. The flocks and herds are chiefly owned by the wealthy people of pure Spanish descent who usually live in the large provincial towns, in all the luxury of civilised life, while on the pampas the picturesquely clothed *gauchos* (see Fig. 24), as the Mestizo herdsmen are called, lead a roving life, mounted on their spirited horses, and scorning to enter a town unless they are tempted by the prospect of a fight or revolution. Every year more of the grass is being ploughed up, and hundreds of square miles of thistles have been cleared off by burning, in order to grow maize, wheat, flax, and European fruit of every kind. Hides, meat, wool, wheat, and flax are the chief exports, and a great deal of wine is also made.

**487. Climate.**—A strong, dry south-west wind, called the *Pampero*, often darkens the air with clouds of dust. The rainfall, which is usually light and regular, sometimes ceases for a whole year, as in Australia, causing widespread ruin. Disastrous hailstorms are not uncommon, the hailstones being so large as to kill the cattle they strike. Yet, on the whole, the climate is temperate, and favourable to health and outdoor work.

**488. Government and People.**—The government of the republic is like that of the United States; there are fourteen provinces, each with its own parliament, and nine thinly peopled territories; but for foreign affairs they all send representatives to a general congress, presided over by the elected 'president, who must by law be a Roman Catholic. All other religions are, however, allowed full liberty. A great many foreign colonists have been encouraged to settle in the country, and these engage chiefly in farming or trade. Most are Italians, French, or Spaniards; but whole towns of Germans, English, and even Welsh, have been established and are prospering. Education is well attended to, and there are two universities.

**489. Eastern Towns.**—The most populous province, *Buenos Ayres* (i.e. *Good Air*, in reference to its fine climate), stretches from the south shore of the La Plata estuary to the Rio Negro. *Buenos Ayres* (460), the capital of the republic, is the largest city in the southern hemisphere. It stands near the head of the estuary, through which shifting sand-banks and drifting light-ships make it most difficult to steer safely, and the water is so shallow that large vessels must anchor about 10 miles from the town. Its streets, though crossing at right angles, are hilly and very badly paved; the houses are built of bricks, for stone is extremely scarce, and the nearest quarry is 200 miles away. Fuel also must be brought from great distances, as there are no trees on the surrounding pampas. Gas, water, and telephone wires are, however, led into nearly every house. The old Spanish Cathedral is second to that of Lima in age and beauty. New docks are being dug at Buenos Ayres; but the little town of LA PLATA, nearer the mouth of the estuary, has meanwhile become a great seaport. Railways run over most of the province, one line reaching BAHIA BLANCA (i.e. *White Bay*), 400 miles to the south.

**490. Outlying Towns.**—The Western Railway, 700 miles long, runs through SAN LUIS and MENDOZA (the capitals of provinces with the same names) to the borders of Chile. The north-western line, more than 1000 miles long, first follows the Parana to ROSARIO, the capital of Santa Fé province, then

crosses the dry pampas of *Cordoba* to **CORDOVA**, the second city of the republic, with a university and fine observatory. Proceeding through the salt plains of *Catamarca* and *Tucuman*, it sends a branch towards **RIOJA** on the Andes slope, another to **SANTIAGO DEL ESTERO** to the east, and commences to wind up the buttress range of the Titicaca high plain through *Salta* and *Jujuy*, terminating at the town of **JUJUY** at a height of 4000 feet. The fertile plain between the Parana and Uruguay is shared by the agricultural provinces of *Entre Rios* (*Between the Rivers*) in the south, *Corrientes* and *Misiones* (which is named after the Jesuit missions) in the north. The town of **CORRIENTES** (named from the whirling *currents* of the rivers) is well placed for commerce just below the meeting of the Parana and Paraguay, on the frontier of the republic of Paraguay.

491. The deserts of **Patagonia** to the south are divided into several territories, inhabited by the sad-faced *Tehuelches*, now reduced to a small wandering tribe of tall and muscular men. They pride themselves on their indifference to cold, hunger, and fatigue, and live by hunting the guanaco and the rhea on horseback.

#### FALKLAND ISLANDS.

492. The **FALKLAND** group comprises two large islands about 100 miles long, deeply cut into capes and inlets, separated by a narrow channel and surrounded by many detached rocks and islets. The climate is always moist, the sky dull, and the warmth varies little all the year round; a cool damp summer following a warm damp winter. Coarse tussock grass grows in clumps higher than a man on the spongy, peaty soil, and sheep and cattle fatten on it. Sea-lions and the rare fur-seal breed on the shore rocks, and the quaint little town of **Port Stanley**, on the eastern island, has a good deal of trade in supplying passing ships with provisions. The islands form a British Crown colony, with about 2000 inhabitants.

#### URUGUAY.

493. **Area and Surface.**—**URUGUAY** is only half the size of the United Kingdom, and occupies a triangular area



between the north bank of the La Plata estuary and the Uruguay River, which divides it from the Argentine province of Entre Rios on the west. A line, partly marked by small rivers, partly artificial, is the northern frontier towards Brazil. It is often called *Banda Oriental* (i.e. *Eastern Side*), as it lies on the eastern bank of the river Uruguay. The surface is hilly in the north and east, being part of the Brazil Plateau, but in the south and west it is a flat or undulating pampa, where mounted gauchos manage great herds of cattle and flocks of sheep, as in the Argentine Republic. Many foreigners have settled in the country, including large numbers of Basques from Spain and France. Revolutions have been more common in this little republic than in any other on the continent. Meat preserved by various processes is the main export.

**494. Towns of Uruguay.**—The beautiful town of *Monte Video* (i.e. *Vision Mountain*, 120) crowns a rocky promontory which shelters a good harbour on the La Plata estuary. White houses rise on a steep slope from the water up to a great cathedral in the central square. There is a well-attended university; but long ranges of slaughterhouses form the chief features of the town. PAYSANDU, on the river Uruguay, 150 miles from its mouth, has large trade on the river. FRAY BENTOS, farther down stream, grew up round Liebig's extract of meat works, where every day during the summer season a thousand terrified cattle are driven into the slaughtering yards. The beasts are killed and skinned; the hides, fat, horns, and bones being exported by the shipload, and the flesh boiled down into the well-known extract.

#### PARAGUAY.

**495. History.**—PARAGUAY, an entirely inland republic, has had a very eventful history. Jesuit missionaries civilised and educated the gentle *Guarani* Indians of this region 200 years ago. Many mission villages have been deserted, and hundreds of miles of good roads are again covered by tropical forests; but the nation, as a whole, is composed of native Christians speaking the Guaraní language for all ordinary purposes, and

using Spanish only officially. After becoming independent of Spain in 1815, the country was ruled despotically by the dictator Dr. Francia for twenty-five years. It was then of large extent, peaceful and prosperous, but as rigidly closed to foreign travellers as Tibet. After Francia's death there were civil wars and disorder, and then a struggle five years long with the neighbouring states of Brazil and the Argentine Republic. This war ended in 1870, leaving Paraguay with 200,000 inhabitants (one-fifth of its population before the wars), and of these only 30,000 were men.

**496. Area and Surface.**—Much territory was lost, and the boundaries now are the parallel of 22° S., separating it from Bolivia and Brazil on the north, and the Parana marking off Brazil on the east, and the Argentine Republic on the south. The Pilcomayo and part of the Paraguay River are the boundaries from the same state on the west. The north-eastern portion belongs to the Brazil Plateau; the north-west is an almost unexplored part of the dense forest of the Gran Chaco, but the south, the *South American Mesopotamia*, is low fertile land often flooded by the great converging rivers. *Yerba maté*, the dried and powdered leaves of a tree like the holly, is gathered in immense quantities by the Indians in the forests, and exported to all parts of South America, where an infusion of this **Paraguay tea** is the favourite drink. Every man, woman, and child in Paraguay smokes cigars, and tobacco is cultivated to supply them.

**497. Towns.**—The capital Asunción (20), on the Paraguay, close to the confluence of the Pilcomayo, has steamer trade to Buenos Ayres, more than 800 miles distant, and the one short railway runs south-east to VILLA RICA. Although the trains are rather irregular in running, they have always an open truck attached on which the poor may travel free.

## BRAZIL

**498. Extent.**—The Empire of BRAZIL, the only monarchy in the New World, is the largest country in South America. It lies almost entirely within the tropics, and touches every

other country in the continent except Chile. It is as large as the whole Australian continent, or twenty-six times the size of the United Kingdom.

**499. The Brazil Plateau.**—The great grassy high plain of the east of the continent, at a general level of from 1000 to 3000 feet above the sea, forms a natural division of the country. It is ridged with innumerable mountain and valley systems. The most important mountains form the **Sea Range** which runs for 1500 miles from 10° S. to 30° S. Wild cattle and horses roam in great herds over the central plains, and sheep are pastured on the extreme southern slopes bordering Uruguay. **Diamonds** and **gold** have been collected for a century and a half in the east, and coal-mines are now being opened in the south, but buried treasures in the shape of ore still await practical discovery. Along the east coast, between the Sea Range and the sea, all the useful tropical plants are cultivated in plantations tended by negroes. **Coffee** is particularly widespread, the vast fields of shrubs overshadowed by palm trees to keep off the intense sunlight yield several harvests of berries in the year, and supply fully one-half of the coffee of the world.

**500. The Selvas.**—The second great division is the low plain of the Amazon, a silent sea of trees and brilliant flowers woven together with twining climbing plants, such as the vanilla, and alive with exquisite little humming birds, bright-coloured parrots, and long-tailed climbing monkeys swinging from the branches. The insects also are brilliant in colour, and some shine with a phosphorescent light so brightly that the ladies of Brazil often wear live fireflies in their hair instead of jewellery. These dark hot forests are cleft by broad tracts of warm muddy water pouring swiftly along to join the Amazon, and so reach the sea (see Fig. 22). The *manatee* or sea-cow, the mail-clad alligator, turtles of extraordinary variety, and fish of every kind swarm in them. Here and there the round leaves of the *Victoria regia*, 6 feet in diameter, and the great white blossom of this queen of water-lilies, form floating islets on which light-footed birds catch their insect prey. Now and then a steamer clanks noisily along, any passenger who dares to appear on

deck is half hidden in a cloud of mosquitoes. Now and then a dark-skinned, almost naked, Indian glides up the narrower waterways in his light bark canoe to collect the juice of the indiarubber tree, which here supplies the finest rubber known. But the vast region of the selvas, in which the whole British Islands might be contained ten times over, has hardly a civilised town, and its enormous resources of timber, wild fruits, and dye-woods (one of which originally gave its name of *Brazil* to the country) are little used as yet. The northern boundary of this region, and of the Empire, is the line of the **Sierra Acaray** (north of which lie the colonies of Guiana), the **Sierra Parime**, and the continuation of the crest of the Guiana high plain marking off Venezuela.

**501. People.**—The original people comprise several hundred different tribes of Indians, speaking different languages, and differing completely in their habits. Portuguese settlers arrived in 1503, bringing negro slaves to work for them, and Jesuit priests who set to work to convert and civilise the natives. They were very successful in this, and introduced as a "common language" one of the Indian tongues, which has spread so widely that the natives of different tribes can now speak freely to each other and to the whites. The usual mixture of races has taken place, but several hundred thousand Germans, speaking their own language, form farming colonies in the temperate southern provinces. In 1808 the King of Portugal, driven from Europe by the French, took refuge in his great colony, and on returning home left his son as regent, but the young man declared himself Emperor of Brazil in 1822, and the Empire has existed ever since almost free from revolutions. The Government is by two elected Houses of Parliament for the whole Empire, meeting in the capital, and in addition a special governor and elected local parliament for each of the twenty provinces. A strong army and navy uphold the strong government that has made Brazil the most settled and successful country of the continent. Slavery continued long, but was finally abolished on 13th May 1888, when a million negro slaves were set free.

Maize is a common grain crop, wheat, though grown a little,

is imported from the 'United States for the food of the better classes, but the **manioc flour** (known in Europe as *tapioca*), obtained by grating down large tubers, the juice of which is poisonous, and must be carefully separated, forms the staple food of the people.

**502. Provinces of the North and West.**—The vast north-western province *Amazonas*, including most of the selvas, and the adjoining south-western provinces of *Matto Grosso*, form together one-third of the area of the Empire, but contain only one-hundredth of the population. In the south of *Matto Grosso* the river Paraguay overflows at the commencement of the wet season, forming a lake—the **Xarayes Lagoon**—as large as the whole of Ireland, which dries up again when the rains cease.

**503. Towns of the North-East.**—**PARA** (or *Belem*), on the southern mouth of the Amazon, is a hot, unhealthy port, where the indiarubber and other products of the forests are transhipped from river steamers to ocean-going vessels. **MARANHAO**, on a little island off the north coast, opposite the province of the same name, gets an enormous rainfall from the north-east trades. South of Cape St. Roque, **PERNAMBUCO** (150, often called *Recife*, i.e. reef, on account of the long reef which protects the harbour) is composed of three connected towns, the oldest in Brazil, and is kept busy by the great sugar plantations of *Pernambuco* province, through which a short railway runs. The early Portuguese liked long names, and they called the seaport from which a telegraph cable now extends to Lisbon, *Cidade de Sao Salvador da Bahia de todos os Santos* (i.e. the City of the Holy Saviour, on the Bay of All Saints), but it is now known simply as **BAHIA** (140). This fine but fever-haunted town, rising steeply from a safe rocky bay, is provided with hydraulic lifts to help passengers up the steep streets. It has a university, and contains the cathedral of the Archbishop of Brazil. A railway 300 miles long, to the north-west, through the wooded province of *Bahia*, reaches the great river, São Francisco.

**504. Towns of the South-East.**—The capital **Mis de**

**Janeiro** (360, *i.e.* *January River*, as it was discovered on a New Year's Day), south of Cape Frio, is an irregular and rather ugly town. But it has a fine situation on the west side of a deep oval bay 30 miles long, and shut in on all sides except the entrance by fantastic granite hills. This is usually said to be the very finest harbour in the world. Opposite the town the more distant peaks of the **Organ Mountains** tower up like a gigantic cathedral organ. Railways radiate inland and along the coast. One crossing the Sea Range north-westward traverses the mining province of *Minas Geraes*, passing **OURO PRETO**, where gold-mines are worked; and a branch from it due north reaches **SAVARA**, within 100 miles of **DIAMANTINA**. This, as its name suggests, is the centre of the diamond-mines, where the rough stones are laboriously washed out of the clay by negroes, under the close watch of Brazilian overseers. Until slavery was abolished, the negroes were encouraged by getting their freedom if they found a diamond of unusual size. A line passes south-west parallel to the coast, through continuous coffee groves, to **SÃO PAULO**, 200 miles distant, on the tropic of Capricorn, and branches inland through the rich plantations of *São Paulo* province, carrying their harvest to the port of **SANTOS**. **PELOTAS**, at the entrance of a lagoon running northward along the coast from the Uruguay frontier, and **PORTO ALEGRE**, at the head of it, are termini of railways from the farming province of *Rio Grande do Sul*, where the Germans are most numerous and prosperous.

## CHAPTER XXIV

### NORTHERN COUNTRIES OF SOUTH AMERICA

#### GUIANA.

**505. Climate and People of Guiana.**—The three colonies that remain on the mainland lie close together on the northern slope of the Guiana Plateau, between the north-east boundary of Brazil, which has never been exactly fixed, and the mouth of the Orinoco. The hot and pestilential coast strip, deluged with tropical rains, is a luxuriantly fertile region, and the uplands to the south, traversed by large rivers with magnificent waterfalls, are covered by a tangled mass of primeval forests into which white men rarely venture. The muddy streams are favourite haunts of the electric eel, which kills its prey by a sudden electric shock. The savage *Caribs*, who live here, once occupied the West Indies as well, and gave their name to the Caribbean Sea. They also gave rise, from their man-eating habits, which they still retain, to the word “cannibal.”

Rocks, sculptured with hieroglyph writing that has never been deciphered, show that a civilised native race must once have inhabited Guiana.

**506. FRENCH GUIANA**, separated from Brazil on the east by the Oyapok River, and from Dutch Guiana on the west by the broad Maroni, has seen many fruitless attempts to colonise it. Tens of thousands of unhappy Frenchmen have been sent out from time to time, but only a few hundreds have survived a year of the climate. Cayenne (10), the capital, is a convict station for the worst criminals, and in France to be sent

to Cayenne is considered as fatal as to be sentenced to death; but villages have also been built in healthier places on the banks of the Maroni. The hot red pepper exported from the capital has made the name *Cayenne* familiar everywhere.

**507 DUTCH GUIANA**, stretching from the Maroni to the Corentyn River, is rather larger than the French colony. It is often known as *Surinam*, the name of its central river, at the mouth of which stands Paramaribo, the chief town, built of wood, and traversed by canals like the cities of Holland. The sugar plantations are attended to by negroes under Dutch overseers.

**508. BRITISH GUIANA** extends westward from the Corentyn to Venezuela, and is the largest of the three Guianas, although rather smaller than the United Kingdom. It contains three provinces named from the three chief rivers. The great *Essequibo* River runs through the centre of the colony, and the *Kaieteur Fall*, on a tributary far inland, is one of the grandest in the world, the whole river, 370 feet broad, plunging over a cliff more than 800 feet high. Farther south, at the mouth of the *Demerara*, the capital, *Georgetown* (10), is the healthiest town of northern South America, and contains an energetic British population. A railway runs towards *NEW AMSTERDAM*, a little port at the mouth of the *Berbice*, and all the hot coast strip it traverses is diligently cultivated by coolies from India, Chinese, and negroes. A chessboard pattern is given to the plantations of sugar-cane, coffee, and cotton by innumerable little irrigating canals. Sugar is the great product of the place, sugar mills and rum distilleries are the chief features of each village or settlement. Near the meeting-place of Brazil, British Guiana, and Venezuela stand a group of strange pillar-like mountains, the greatest of which, *Roraima*, rises from a steeply sloping base in straight precipitous cliffs of pink rock 2000 feet high, and is almost always veiled by sheets of water leaping down over the cliffs on every side, and flowing away to the Orinoco, the Amazon, and the Essequibo. It was believed to be utterly inaccessible until climbed by an English botanist in 1884.



## VENEZUELA.

**509. Area and Surface.**—**VENEZUELA**, occupying the north of South America, is five times as large as the United Kingdom, and is bounded on the west by Colombia, on the south by Brazil, and on the east by British Guiana. The Orinoco flows in a nearly circular curve round the Sierra Parime, and traverses the undulating *llanos*, where herds of cattle are pastured. The *llanos* are great steppes nearly covered with water in the rainy season, richly grass-grown immediately after, and parched deserts during the dry weather. Fifty years ago they were almost treeless, but now clumps of palms and other trees dot the landscape everywhere; and when the plains are flooded, the native Indians retire to houses built in the branches. The *llanos* are bounded on the south by the wooded heights of the Guiana Plateau, traversed by numerous streams, but almost uninhabited, and on the north by the north-east extension of the Andes, which raise their snowy crests close to the sea, and give a very short course to the north-flowing streams. Almost all the important towns are on the north slope of the latter range, in a cool climate, with railways down to their hot seaport on the Caribbean Sea. The early Spanish explorers found a native village built on piles in Lake Maracaybo, and called it *Venezuela*, the Spanish for "Little Venice." The name, given half in joke, spread to the whole country.

**510. Government.**—Politically, the republic contains eight states, with separate parliaments for local affairs, and eight thinly peopled territories. Civil wars and revolutions are chronic, yet much attention is given to agriculture in the short intervals when a settled government prevails. Coffee, sugar, and cacao are the chief plants cultivated in the plantations; there are some copper-mines, and a large gold-field, recently opened on the Orinoco, has attracted numbers of foreign miners. The untouched mineral wealth of the country would make it one of the most prosperous in the world if it only had a peaceful and law-abiding people.

**511. Towns of Venezuela.**—**Caracas** (70), the capital, a fine progressive town supplied more abundantly with tramways, gas, water, telephones, and newspapers than any of its size in Britain, occupies a mountain valley 3000 feet above the sea, with a lofty range rising behind it. The railway winds like a serpent down to the flourishing harbour **LA GUAYRA**. The best **cacao** trees in the world are grown in the neighbourhood, and immense quantities of the cocoa are sent to Europe for making chocolate. **VALENCIA**, in a similar position farther west, with a railway to its harbour, **PUERTO CABELLO**, lies amongst the best coffee plantations of the state. **MARACAYBO**, on the gulf it is called after, is the chief western harbour. Where the Orinoco traverses a narrow pass 250 miles from its mouth, the town of *Angostura* (i.e. *The Pass*) was founded within reach of sea-going vessels, but the name was changed to **CIUDAD BOLIVAR** in honour of the liberator. Here sarsaparilla and other valuable drugs, obtained from the forests, are shipped; and it is said that when the river overflows, alligators swim up the streets and have been known to pick children out of the windows.

#### TRINIDAD.

**512 TRINIDAD**, a British island colony, and little **Tobago**, north-east of it, although usually classed with the West Indies, lie on the American continental shelf. Two long promontories of the square-shaped island of Trinidad run eastward, enclosing the Gulf of Paria, which is sheltered to the north by the peninsula of Paria in Venezuela, the narrow entrance being called the *Dragon's Mouth*. The southern promontory is separated from the mainland by a similar strait to which the name of *Serpent's Mouth* is given. The island is hot and fertile, rich in all tropical products, especially cocoa from plantations of cacao trees. It is famous for a great deposit of half-melted asphalt, the *Pitch Lake*, which furnishes an important export at the harbour of **LA BREA**. The capital, **Port of Spain** (30), close to the *Dragon's Mouth*, has a good harbour, and contains a fine botanic garden with specimens of tropical vegetation from far and near.

## STATISTICS OF THE COUNTRIES OF AMERICA ABOUT 1885.

Country.	Government.	Area in thousand square miles.	Population.		Average in million pounds.		Time at capital.†
			Millions.	Per square mile.	Exports.	Imports.	
Canada . . . . .	Respons. Col.	3470	4.5	1.5	19	22	7
Newfoundland . . . . .	"	40	0.2	5	1.2	1.5	8
United States . . . . .	Republic	3500	56	16	146	133	7
Mexico . . . . .	"	742	10	13	7	5	5.24
British Honduras . . . . .	Crown colony	7	0.03	4	0.3	0.3	6.4
Guatemala . . . . .	Republic	47	1.3	27	15	0.8	5.54
Honduras . . . . .	"	46	0.5	10	0.4	0.4	0.8
Salvador . . . . .	"	7	0.6	90	1	0.5	6.0
Nicaragua . . . . .	"	49	0.4	8	0.4	0.3	6.12
Costa Rica . . . . .	"	23	0.2	10	0.5	0.5	6.20
Cuba . . . . .	Spanish colony	43	1.5	35	14	11	6.26
Haiti . . . . .	Republic	10	0.7	70	1.5	1	7.8
San Domingo . . . . .	"	18	0.5	27	0.5	0.4	7.20
Puerto Rico . . . . .	Spanish colony	3	0.8	250	2.5	2	7.37
Bahamas . . . . .	Repres. Col.	5	0.04	9	0.1	0.2	6.48
Jamaica . . . . .	Crown colony	4	0.6	133	1.4	1.4	6.52
Windward Islands . . . . .	Repres. Col.	0.6	0.15	240	0.5	0.5	7.55
Leeward " . . . . .	"	0.5	0.12	256	0.5	0.5	7.45
Trinidad . . . . .	Crown colony	1.7	0.18	101	2.5	2.5	7.53
Barbadoes . . . . .	Repres. Col.	0.16	0.17	1045	1	1	8.1
Guadeloupe, etc. . . . .	French colony	1.8	0.3	125	1	0.5	7.53
Venezuela . . . . .	Republic	632	2	3	3	2	7.32
British Guiana . . . . .	Repres. Col.	109	0.3	2	2.5	1.8	8.5
Dutch " . . . . .	Colony	46	0.06	1	..	..	8.13
French " . . . . .	"	121	0.03	0.2	1	0.5	8.27
Brazil . . . . .	Lim. monarchy	5119	13	4	21	19	9.8
Paraguay . . . . .	Republic	93	0.2	3	0.4	0.3	8.5
Uruguay . . . . .	"	73	0.6	8	5	4.5	8.15
Argentine . . . . .	"	1135	3.4	3	14	17	8.6
Falkland Islands . . . . .	Crown colony	6	0.002	0.3	0.1	0.1	8.0
Chile . . . . .	Republic	294	2.5	9	9	9.3	7.17
Bolivia . . . . .	"	772	2	2.5	1.8	1.9	7.28
Peru . . . . .	"	464	2.6	5	3*	4.5	6.48
Ecuador . . . . .	"	283	1	4	1	1	6.48
Colombia . . . . .	"	304	3.8	7	2.5	2	7.2

\* Uncertain.

† Greenwich noon.

## CHAPTER XXV

### THE CONTINENT OF AFRICA

**513. Position and Form.**—Africa is of all the continents the most shut out from the rest of the world ; its coast is so uniform and free from inland seas, its size is so great, its climate round most of the coast is so bad, and most of its people are so savage, that the name **Dark Continent** describes it well. It lies south of Europe and west of Asia, the meridian of  $20^{\circ}$  E. divides it into two almost equal parts, and crosses the continent at its greatest length from north to south nearly 5000 miles. The parallel of  $10^{\circ}$  N. crosses it at its greatest breadth of 4500 miles from the Atlantic to the Indian Ocean. The shape resembles South America, but the north-western outcurve is larger and more prominent, and the north-eastern is broken by the Red Sea. North of the equator Africa extends from east to west, but south of it more from north to south. More of the surface lies in the torrid zone in Africa than in any other continent.

The form of Africa differs altogether from that of the other continents, and although it is least known of any, explorers have made it quite certain that there is no great backbone of mountains, and that large rivers, as a rule, have curiously curved courses.

**514. West Coast.**—From the steep cliffs of Cape Spartel opposite Gibraltar in  $36^{\circ}$  N., where Africa comes close to Europe, the coast runs south-westward for 1500 miles, at first under the Atlas Mountains, and then along the low parched sand

border of the Sahara 'desert to Cape Blanco (*i.e.* *White Cape*). Off the middle of this line the **Canary Islands** (§ 154), more than 100 miles from the shore, spring up from deep water outside the continental shelf. Five hundred miles farther south, beyond the mouth of the Senegal River, **Cape Verde** (*i.e.* *Green Cape*) juts out, and is the most westerly point in Africa, reaching  $17\frac{1}{2}^{\circ}$  W. At this point the direction of the coast turns to the south-east for 1000 miles to Cape Palmas, and thence runs, nearly along the parallel of  $5^{\circ}$  N., due east for 1200 miles, almost reaching long.  $10^{\circ}$  E. Here it turns at right angles, and thereafter runs on the whole southward. The **Gulf of Guinea**, with flat marshy shores overgrown with the densest tropical vegetation, occupies this right angle. It is divided by the delta of the Niger into the small Bight of **Benin** to the west, and the larger Bight of **Biafra** to the south. In the latter the volcanic island **Fernando Po** springs up from the continental shelf, but is not a true continental island. Cape Lopez, just south of the equator, is the extremity of a gentle outcurve half-way between the Niger and the place where the Congo enters in  $6^{\circ}$  S. Cape Negro (*i.e.* *Black Cape*), the promontory of another outcurve in  $16^{\circ}$  S., may be taken as the southern extremity of the Gulf of Guinea, and thence the coast is almost without harbours and is lined by desert mountains rising one behind another in dreary terraces for 1000 miles to the south, where the Orange River flows into the sea. Five hundred miles farther on the finger-like Cape of Good Hope points southward, and at long.  $20^{\circ}$  E. the farthest south point is reached in Cape Agulhas (*i.e.* *Needle Cape*, so called because the Portuguese found the declination of the compass needle to alter rapidly) in  $35^{\circ}$  S. Nearly 500 miles of coast faces the south, but the continental shelf running far out to sea, and forming the stormy Agulhas Bank, has a triangular outline. This shows that at one time, ages since, Africa had a pointed extremity like South America.

515. The **East Coast** is very like the west, although the mountain chain is closer and steeper, but it possesses a good natural harbour in Delagoa Bay in  $25^{\circ}$  S. Five hundred miles

farther north the great delta of the Zambesi begins, and the Mozambique outcurve swells eastward, terminating at 10° S. in Cape Delgado.

The island of **Madagascar**, more than 1000 miles long, is separated from this part of the coast by the deep Mozambique Channel, which is 250 miles wide in its narrowest part, and contains several groups of islets. From Cape Delgado a shallow incurve sweeps northward to the equator, and in the middle of it the little islands of **Zanzibar** and **Pemba** lie close to shore on the narrow continental shelf. From the equator the coast runs north-east for 1000 miles to Cape Guardafui in long. 51° E. This is the most easterly point of Africa, and the extremity of the dumpy-looking Somali Peninsula, which points towards the hot island of **Socotra**, 150 miles to the north-east. Turning nearly due west along the Gulf of Aden, and again at right angles as a line of coral-girdled riverless cliffs bordering the Red Sea for 1500 miles, the east coast ends at the head of the Gulf of Suez, in 30° N. At this point the Suez Canal, dug through the flat sandy desert, converts Africa into a gigantic island.

**516. North Coast.**—The Mediterranean coast commences in the low delta of the Nile, stretching westward for 200 miles, and then runs north-westward along the low sandy shores broken by a remarkable long square-cut recess between long. 20° and 10° E., forming the gulfs of Sidra on the east, and Cabes on the west (anciently known as the *Greater and Lesser Syrtes*). Cape Bon, at the west end of it, and 1000 miles west of the Nile, is the most northerly point of Africa, reaching to 37° N., and from it the coast runs west by south to the Strait of Gibraltar.

**517. The Great Plateau.**—A wide high plain (the Great Plateau) averaging three-quarters of a mile above the sea, fills all the south of Africa. It rises in terraced heights from the east and the west coasts, and sinks to a lower plain (quarter of a mile high on the average) along a line drawn from the Bight of Biafra to the middle of the Red Sea coast. The highest part of the Great Plateau is on the east side and towards the north. The mountainous country of Abyssinia in 10° N. contains the

broadest part of the 'eastern bounding chain, which narrows towards the south, and shoots up in the snow covered peak of **Kenia**, just south of the equator, reaching a height of 18,000 feet, and second only to the noble summit of **Kilimanjaro**, 200 miles farther south. The high plain on the whole dips westward and is divided into two parts—a large northern and a smaller southern plateau—by the deep valley of the Zambesi, which flows by an S-shaped course to the east.

**518. The Zambesi.**—This river, rising in the little Lake Dilolo, in about 12° S. south-west of the middle of the continent, flows southward under the name of the Liba. In 18° S. it receives the outflow of Lake Linyanti, flows on over foaming rapids for many miles, until at the **Victoria Falls**, where it is more than half a mile wide, it plunges down a crack in the hard rocks that stop its passage. This crack receives the whole breadth of the river, and as it is 100 feet deep and only 250 feet across, the vast volume of water driven into it raises clouds of spray like steam, and the natives call the frightful chasm "*the Thundering Smoke*." The only escape for the river is by a long zigzag cliff-walled passage not more than 60 feet wide, and through this the torrent rushes with an awful roar. Then sweeping northward and once more southward on its way to the east, the river passes through the eastern barrier mountains by the Laputa gorge, and, after receiving the Shiré from Lake Nyassa, sweeps on to its delta on the Indian Ocean, which it enters after a total course of 1400 miles.

**519. Southern Division of the Great Plateau.**—From the Limpopo River, which crosses the tropic of Capricorn, first northward and then southward as it flows to the east, the **Drakenberg Mountains** sweep round in a wide curve close to the east coast, to which they sink in abrupt wooded terraces. They slope more gently to the west and sink into lower ranges and lofty terraces called the *Grand Karoo* on the south. The **Orange River**, named not from the fruit nor from the colour of its water, but after a Dutch prince, and its northern tributary the **Vaal**, flow westward to the Atlantic. A large, nearly level region of internal drainage extending between the Orange and the

Zambesi is called the **Kalahari Desert**, and towards the north it contains the salt Lake Ngami, which receives several rivers, but has no outlet.

**520. The Great Lakes.**—North of the Zambesi the eastern part of the Great Plateau is the region of great fresh-water lakes, the equals of which are only to be found in North America. The southernmost, **Lake Nyassa**, running north and south and 300 miles long, is crossed near its upper end by the parallel of 10° S. It lies between a double row of lofty mountains, and overflows by the river Shiré southward to the Zambesi. **Lake Tanganyika** has a similar outline, but is 400 miles in length, and on a higher level. It stretches northward along the meridian of 30° E., from a point 150 miles north-west of Lake Nyassa, across a stretch of fertile country with open forests. This lake overflows periodically from the middle of its west coast into the Congo. Again, 150 miles north-east from the northern end of Lake Tanganyika, and on a still higher level (nearly 4000 feet), is the great circular basin of the **Victoria Nyanza**, as its discoverer Livingstone named it in honour of the Queen. It lies under the equator, and is larger than any other lake except Lake Superior—as large indeed as the entire island Tasmania. It gives origin to the Nile, the most famous river in the world, which flows down a steep descent north-westward, touching the small shallow **Albert Nyanza**, and sweeping across the lower or Northern Plateau.

**521. The Congo depression** on the western side of the Great Plateau, and traversed by the equator, was probably once an inland sea three times the size of the Caspian. But a narrow outlet was formed in the west, so the sea was drained, and the great river left flowing across its bed, which is now thickly covered with dense forests in some parts. The **Lokinga Mountains**, ridging the high plain in a westward curve from Lake Nyassa, surround the south shore of the small Lake Bangweolo in 12° S., near which Livingstone died. The Congo issues from this lake, and flows north for about 1000 miles to the equator, where a line of cataracts called **Stanley Falls**, after the explorer of the river, breaks its bed. Here the river turns



north-westward in a long arc, then swerving south-westward, the swift stream, more than a mile wide, crosses the equator, and again widens into the expanse of Stanley Pool, a deep lake larger than Loch Lomond. Emerging thence, it descends from the Great Plateau by a series of roaring rapids and cataracts, the Livingstone Falls, between steep and lofty walls of rock for nearly 100 miles. Then it sweeps across the coast low plain and into the Atlantic with a width of 7 miles, a depth of 1000 feet, and a larger volume of water than is borne by any other river except the Amazon. All along its course, tributaries from south and east and north pour down the sloping sides of the Congo depression, and stream across to the main river. \* Several of these tributaries are more than 1000 miles long, and all are broken by rapids or falls.

**522. Northern Plateau: The Nile.**—The plain to the north (the Northern Plateau) sinks in terraces from the Great Plateau (§ 517), and along the coast of the Atlantic and the Mediterranean forms wide tracts of low plain: in one or two places small depressions below sea-level occur. \*The Nile, flowing northward from the equatorial lakes, receives the Bahr-el-Ghazal and other tributaries from the west at about 10° N., and takes the name of *White Nile*, because its water is clear and bright. Five hundred miles farther north the *Blue Nile* (or Nile of turbid waters), 900 miles long, flows in from the Abyssinian Mountains on the right. The conjoined stream flows over a series of rapids (the *Sixth Cataract*, counting from the sea), and after the influx of the *Atbara*, the last tributary, which also comes from the Abyssinian heights, the *Fifth Cataract* occurs. Here the Nile leaves the well-watered fertile land of the Sudan, and flows in a winding course through a flat valley, walled by low cliffs, and broken by three more cataracts (the *Fourth, Third, and Second*) at nearly equal distances of 150 miles. \*The *First Cataract* is encountered a little beyond the tropic of Cancer, and then the great river rolls freely to the sea for 800 miles across the sand deserts, and finally spreads into a vast triangular delta, the resemblance of the two main river branches on which to the Greek letter  $\Delta$  originated the name.

The Nile is the longest river in the world, as it measures more than 4000 miles from its remotest source to the sea. In the autumn of each year the monsoon rains of the Abyssinian Mountains, swelling the Blue Nile and Atbara, produce a gradual rise and overflow of the lower Nile, which covers the flat land on both sides of the river. When the flood subsides, it leaves a deposit of fertile mud, and thus a ribbon of cultivable land is formed between two dreary deserts.

**523. Lake Chad** occupies a hollow in the centre of the Sudan towards the south of the Northern Plateau in lat. 14° N. It receives several rivers from the Jebel Mara hills on the east, and in rainy seasons, when its waters cover more than twice their usual area, they find an outlet north-eastward along the valley of another Bahr-el-Ghazal. This leads for 300 miles to a lower depression where evaporation is rapid and the stream dries up, leaving a deposit of salt.

**524. Niger Basin.**—The comparatively low line of the **Kong Mountains** along the north coast of the Gulf of Guinea has a great rainfall, and numerous streams pouring down the northern slope unite to form the **Niger**, which flows at first north-eastward, but when it crosses the meridian of Greenwich, in lat. 18° N., turns abruptly south-eastward. It receives the long navigable **Binué River** on the left, which flows from the northern base of the Great Plateau, and then the Niger turns due south and enters the sea within 1000 miles of its source in a straight line, but after a course of nearly 2500 miles.

**525. The Sahara.**—The great desert of the Sahara extends northward almost to the shore of the Mediterranean, from the fertile Sudan or southern strip of the northern plateau. It is dotted with occasional oases, but as a rule forms a sea of burning sand, with monotonous ranges of lofty dunes, or dreary hills and valleys of parched sand-worn rock. Long ago it must have been a well-watered land, for ancient river-channels (called by the Arabs *wadies*) still score the arid sides of the **Tibesti Range** of mountains which crosses the desert from Jebel Mara north-westward to the slopes of the **Atlas**. The **Atlas Chain** rises steeply to snow-covered summits more than 2 miles high and runs north-

eastward from Cape Nun, opposite the Canary Islands, for 1400 miles in a series of parallel ranges to Cape Bon. These ranges support the plateau of Shotts (*i.e.* small lakes without outlet), and are closely connected with the opposite mountain system of Spain; the two were indeed joined in bygone ages.

**526. Climate.**—Over the greater part of the northern plateau there is very little rain, and as it is also the hottest region in the world, the land is desert, but along the slope towards the great plateau there is more rain, and on the east and west bordering mountains there are very heavy monsoon rains in summer. The Great Plateau is, on the whole, well watered, especially along its northern land margin, on the Gulf of Guinea, the Basin of the Congo, and along the whole east coast. Much of it is therefore covered with tangled tropical forests, but the central and southern parts of the plateau, with a moderate rainfall, bear clumps of separated trees, forming open forests like those of temperate countries. The Kalahari Desert in the south-west is almost completely protected from rain, as the higher eastern edge drains all the moisture from the prevailing south-easterly winds. Cactus plants and large juicy water-melons grow in the hot sand, storing up any moisture in the form of dew or occasional showers that may come their way. Along the Mediterranean, the borders of the Sahara, and the extreme south, the coast lands are dry and healthful. But on the east and the west the low coast strip surrounds the terraces, which rise to the mild and agreeable high plains, with a poisonous belt, where foreigners always suffer from fever.

**527. The animals** peculiar to Africa have been mentioned in § 65. The *tsetse fly* ranges over the tropical parts of it, and although quite a small insect and harmless to man, its bite is fatal to domestic animals, such as oxen, and explorers of this region are compelled to have all their goods carried by men. It is said of the continent that it is the abode of the most man-like apes (the gorilla and the chimpanzee) and the most ape-like men. But all the inhabitants of Africa are not negroes, nor are they altogether savage.

**528. People.**—The total population is guessed to be about

200,000,000, but it is very difficult to make a fair estimate. In the north the people are of the White type, some are **Semitic** emigrants from Asia (*e.g.* the Arabs and Moors), but most are **Hamitic** people, true natives who are very dark in complexion, but have not the woolly hair nor thick lips of negroes. Both these races are mainly Mohammedan in religion. The natives of all the rest of the continent are of the Black type. On the border country between the northern and the great plateaux south of the Sahara the true **Negroes** have their home; they are rapidly being converted to Mohammedanism, but were originally fetichists and very often cannibals, some tribes being particularly famous for the abominable cruelties they practise. Most of the Great Plateau is peopled by the numerous tribes of the brown **Bantu** race, many of whom are tall and handsome, willing to become civilised, and very brave soldiers. They are originally nature-worshippers and fetichists, but Christianity has made much more progress amongst the Bantu races than amongst the regular negroes. In the extreme south-west there is a degraded yellow-complexioned race, the **Hottentots**, and many singular tribes occur here and there over the continent, one of which, the **Akkas**, are dwarfs, hardly more than 4 feet high.

**529. Exploration.**—Within the last two centuries, colonies of Europeans have been formed all round the coast of Africa, and in the temperate regions of the extreme north and south these have been rapidly increasing. Even yet there are immense regions of Africa entirely unknown to explorers or map-makers. The Arabs were the first to make the interior of the continent known to the European world, and they examined most of the northern regions before the end of the fifteenth century.

For 300 years after that time Europeans only visited Africa for slaves, and added almost nothing to a knowledge of the continent. Now all civilised nations prohibit this horrible traffic, and British men-of-war are always cruising in the Red Sea and along the east coast to capture the dhows or native vessels in which the Arabs still carry the unfortunate creatures across to Arabia and the ports of Egypt for sale (see Fig. 27). In the heart of the continent the slave trade is still the only commerce

that flourishes. The most valuable merchandise in Africa is ivory, and the Arab traders must catch slaves to carry it to the coast, for if they had to pay their carriers for a journey that occupies months, and sometimes years, there would be no profit left. But as the peaceful agricultural tribes are liable to be attacked at any moment, it is quite impossible that these people can advance in civilisation. More recently the French from their northern colonies, and the British, Portuguese, and Germans from their possessions on the east, south, and west, have explored some of the continent, and since 1840 missionaries have done a great deal in this way. Livingstone, the best and greatest of African explorers, was the first to cross the continent from west to east, riding on an ox over the Great Plateau. In his long journeys of discovery, which lasted years at a time, he was all alone in lands where even oxen could not live, amongst the Bantu tribes, of whom he made lasting friends. Stanley, the correspondent of an American newspaper, the *New York Herald*, first sent out to find Livingstone, who had not been heard of for years, has also become a great traveller; to him the Congo owes the discovery of its course. But it is impossible to mention the hundreds of brave explorers who have been at work, and who are still struggling with dangerous climate, and difficult forests and swamps, and hostile natives, to find out how the rivers of this continent flow, and to endeavour to stop the trade in slaves which makes it the most miserable land on the earth.

Although there are no roads in Africa outside the colonies, the whole land, through forests and over plains, is covered with a network of winding footpaths, beaten hard by the passing of thousands of naked feet for hundreds of years, joining village to village, and ultimately sea to sea.



FIG. 25.—AN OASIS IN THE SAHARA ARAB TENT UNDER DATE PALMS

## CHAPTER XXVI

### COUNTRIES OF NORTHERN AFRICA

#### THE BARBARY STATES

**530 History**—The fertile and well-watered north slope of the Atlas range and the coast to the east were colonised in early times by the Phœnicians, who called their state Carthage, and after a tremendous struggle were conquered by the Romans. The Romans were driven out by the Arabs in the sixth century. The native Hamitic people are called **Berbers**, and their land *Barbary* or *Mauritania*. Barbary was afterwards divided into *Marocco*, "the land of the extreme west," as the natives call it, and *Algeria* which were independent, *Tunis* and *Tripoli* which passed into the power of the Turks; but throughout all the changes the native Berbers have remained the chief part of the population.

**531. MAROCCO**, occupies the south-western and higher part of the Atlas range, with a stretch of the Sahara beyond it, and is separated from Algeria about lat.  $20^{\circ}$  W. It is about twice the size of the United Kingdom.

It is a Mohammedan state, and education of an inferior kind is therefore common; the Emperor calls himself the *Prince of true Believers*, and has absolute power over the lives of his subjects. He lives in great splendour, with hundreds of wives, and is attended by a guard of several thousand soldiers every year when he makes a grand journey between Fez and Marocco, the two chief capitals of his domain. Both these towns are on the seaward slope of the snow-crowned Atlas Mountains. They look magnificent from a distance: the rows of flashing white houses set in green gardens, with the slender minarets and swelling domes of mosques rising against the blue sky, but inside they are ruinous and filthy. Many Jews live in them, a special quarter of each city being walled off, so as to separate them from the Mohammedans or "true believers." At FEZ (100) leather work of all kinds is carried on, and the red cloth caps, which have taken its name, are sent by millions to all Mohammedan countries. Camel caravans keep up traffic with the small coast towns which have poor harbours; TANGIER, 120 miles from Fez (but a ten days' journey), in the extreme north-west, where the foreign consuls live, is the most important. CEUTA, on a little peninsula held by the Spaniards, is only a fortress. Caravans winding over the steep passes of the Atlas range, past great beds of untouched ores, descend on the Sahara, and journey southward to the large date-growing oasis of Tafilet, which is full of villages. They go farther south, for 1000 miles past dried-up lakes, where they load their camels with salt, to Timbuctoo, a great market town of the Sudan, near the Niger. Here the salt is exchanged for gold dust, ivory, ostrich feathers, and negro slaves, which are carried back and sold in Marocco.

**532. ALGERIA**, the most westerly far the most advanced part of Barbary, was once the town of Algiers was a nest of pirates, and the Arab or Turkish despot called the *Dey* kept hundreds of Christian slaves from every country in Europe who

had been captured by his daring and savage sailors. At last this became so serious a danger to commerce in the Mediterranean that the French fleet bombarded the town in 1830, captured the Dey and annexed his land. The French dominions were extended by steady fighting with the natives, until now they reach from Morocco to the Gulf of Cades, and southward to the Sahara, over an area three times that of the United Kingdom.

**533 Surface and Climate**—Algeria occupies three distinct regions: first, the fertile and thickly peopled north slope of the mountains called the Tell, second, the high plain on the summit, diversified by strings of shallow salt lakes called *Shotts*, and chiefly used as pasture land, and third, the low plain of the Sahara, farther south, where date palms and fruit trees flourish here and there. Many artificial oases have been made by boring Artesian wells. Wheat and vines are being grown more and more every year in the Tell, and the high plain of the Shotts is covered with waving fields of esparto grass or *alfa*, which is cut, dried, packed in bales, and exported for paper making. The climate in spring is most delightful, and as the Government is firm and just, the chief towns are becoming favourite winter resorts for invalids from Europe.

**534 Government and Towns**—Algeria is divided into three *departments*, which are part of the French republic, and send members to the parliament in Paris, and three *territories* thinly peopled by natives, and still under military rule. In addition there is the eastern protectorate of Tunis, all the affairs of which are managed by a French resident, although it is nominally independent under a Turkish Bey. Oran, the western department opposite Spain, has many Spanish colonists. Its chief town and port is ORAN, at the end of a rocky bay which forms such perfect shelter to ships that the old Romans called it *Portus divinus* or the divine harbour. A railway from Oran through a valley parallel to the coast enters the department of Algiers opposite France, and after 200 miles reaches the capital Algiers (701). This line is the shortest route from several towns on the coast, which the old Romans reached by means of a long waterway, and so formed the *stagnant* *bay*.



The modern French town runs along the shore for a mile, with rows of tall houses and broad tree-planted streets, gradually growing narrower as the town ascends the hill in the rear. The whole plan is a triangle, the upper part being the old Algerine quarter, crowned at the very apex by the *Kasbah*, or old fortress of the Deys. The railway runs on into *Constantine* province opposite Italy (and containing many Italians), and reaches *CONSTANTINE*, about 250 miles from Algiers; it was named after the Roman Emperor in the fourth century. It is an inland town built on a rocky table, which is separated by straight walled gorges of great depth from the surrounding country. As the line runs eastward to Tunis, 220 miles away, a branch turns north to the seaport of *BONA*, which, with its old name of *Hippo*, was in ancient times the town of the great Bishop Augustine. *TUNIS* (150) was for centuries one of the most learned of Mohammedan towns, and it stands close to the ancient *Carthage*, some ruins of which still remain, although most of the modern town is built out of the stones of the famous Phœnician city.

**535. TRIPOLI**, a province of the Turkish Empire, governed by a pasha, borders the long recess of the Syrtes from Tunis eastward to Egypt. It thus lies opposite Italy and Greece, but the long coastline is always beaten by a heavy surf, and the shallow and dangerous harbour of *TRIPOLI* (30), due south of Malta, is the only seaport with any foreign trade. It is a crescent-shaped walled town, with white mosques and minarets; a broad strip of land where palms grow runs round it outside the walls, and here the freed negro slaves live. The high plain of *Barka*, east of the Great Syrtes, was once thickly peopled by colonists from ancient Greece, and the ruins and tombs of the great city of *Cyrene* still remain near the modern village of *GRENNAH*. There are no real rivers in Tripoli, but the wadies are flooded in the short rainy season. The desert province of *Fezzan* reaches to the northern slope of the Tibesti range, and contains the important trade town of *MOURZOUK*. Over the great sandy plains of the interior the oases, with their wells and villages, rise like islands, and produce great crops of dates.

Flocks of timid and graceful gazelles bound over the desert, and caravans of patient camels, sometimes as many as 3000 travelling in a long row, are led southward 1500 miles from Tripoli to the countries surrounding Lake Chad in the Sudan. The sand between the gases is so heated by the blazing sun, that when a European traveller was passing he had to make sandals for his favourite dog to save its paws from being scorched. Eggs may sometimes be cooked by simply burying them in the hot sand. The terrible sand storms or *simooms* (*i.e. poison blasts*) often sweep over the desert, whirling along cloudy pillars of hot dry sand, which darken the air like the thickest London fog.

#### EGYPT.

• 536. History.—EGYPT extends from Tripoli to the Red Sea, and also includes the peninsula of Sinai on the Asiatic side. Almost the entire population is, however, crowded into the narrow fertile valley of the Nile, and on the great flat fan-shaped delta. It is the most ancient country in the world, and its people were the first to be civilised. More than 5000 years ago they invented writing by means of hieroglyphs or symbolic pictures, and from them our alphabet gradually grew. Hundreds of buildings yet remain of which the walls are painted with the history of this wonderful nation. The natives of the country, the *fellahin*, as they are now called, have always been oppressed by foreign rulers, yet they remain the same race of Hamitic people. Their features are still exactly like those carved on the great tombs and temples that their forefathers were compelled to build for the Pharaohs. The Greeks, and after them the Romans, took possession of Egypt, and there they learned many of the arts of civilised life that have since spread over Europe, and have helped to make Europeans the masters of the world. A great Arab invasion in the sixth century introduced Mohammedanism, and most of the people have remained Mohammedans ever since, although a sect of early Christians—the *Coptic Church*—still continues. After the learned Arabs came the fierce, uncultivated Turks, whose bad government ended the

tinual revolts. In 1787 Napoleon the Great invaded and subdued the country, but Nelson destroyed his fleet in Aboukir Bay in the following year, and the British restored the Turks to power. After many wars the *Khedive* or King of Egypt freed himself from the Sultan of Turkey, on condition of paying a yearly tribute. The country then became a hereditary despotism, claiming rule over the whole Nile valley as far as the equator. The French kept the chief share in the commerce of Egypt, and they opened the Suez Canal in 1869, but since then the British Government, seeing how important it is to keep the canal safe for British ships, have taken charge of the Khedive, who can now do nothing without consulting his British protectors. The fellahin are taxed so heavily that they live in abject poverty, and not only is their money taken but their time; every man must give a certain number of days each year to work on the Government canals and embankments that regulate the floods of the river.

Rebellions in the Sudan portion of the Nile basin led the Egyptian Government in 1884 to desert their garrisons and European governors in the distant provinces, and to draw the boundary of their country at the Second Cataract.

**537 Climate and Products.**—In all parts of Egypt timber is scarce, and some of the boats on the Nile are decked with clay mixed with chopped straw, like the sun-dried bricks which the Israelites had to make when in bondage. The lovely lotus flowers which used to float thickly on the Nile in the time of the Greeks have vanished, and the *papyrus* reeds which furnished the writing material that gave its name to paper are becoming scarce. The crocodile, one of the gods of Egypt, is no longer found in the muddy water, but the beautiful ibis (the sacred bird) is plentiful; and storks and quails that spend the summer in northern Europe retire to the banks of the Nile for winter. The climate is very dry and hot. The blaze of constant sunlight on drifting sand and whitewashed walls, and the torment caused by a plague of flies, makes the people subject to eye diseases, and in no other country are blind people so common. The chief crops raised for export are cotton, under the management of Greek merchants, beans, lentils, wheat, and opium.

**538. Towns of the Delta.**—Just east of the Bay of Aboukir the town of *ROSETTA* stands at the mouth of the western or *Rosetta branch* of the Nile. A few years before Nelson's great sea fight in that bay, a piece of carved stone was picked up here, which gave the key to the hieroglyphic inscriptions that had puzzled all the learned men of Europe for centuries, and from that time the history of Egypt could be read. *DAMIETTA*, a port 90 miles farther east, gives its name to the eastern branch of the Nile, at the mouth of which it stands. *ALEXANDRIA* (230), on a narrow strip of low land facing the sea on the western margin of the delta, has a fine artificial harbour, and is the chief seaport of Egypt. It was named by Alexander the Great when he conquered Egypt, and was for a long time the most learned city in the world. The forts guarding the town were bombarded by the British fleet when putting down a rebellion in Egypt in 1882. Railways connect the numerous towns of the thickly peopled delta. The chief junction is *ZAGAZIG*, near the fort *Tel-el-Kebir*, which was captured by the British army from the rebels in 1882 by a most skilful and courageous assault. The chief line from Alexandria runs straight for 130 miles to Cairo, the capital of Egypt, and the largest city in all Africa.

**539. Towns and Ruins of the Nile.**—*Cairo* (370), stands on the right or eastern bank of the Nile, just where the great river begins to branch over the delta. It was founded by the Arab conquerors, and its name means *The Victorious*. *BULAK*, a suburb on the river, has a great museum of Egyptian antiquities. The new part of the city is built like a French town with wide straight streets, but the ancient part is itself a museum of quaint houses. The streets or lanes are so narrow in some places that when an Arab chief rides through, perched high on his camel, the passengers must dodge between the legs of the animal to escape being crushed. Spirited donkeys of the fine Arabian breed trot about continually carrying tourists of every nation, and driven from behind by shouting Egyptian donkey boys. Native women glide through the streets entirely covered in white mantles, except a narrow slit through which their black eyes peep, but beside them there are many of the

latest Paris fashions, and a perfect babel of languages may be heard in the bazars or shops. A railway runs up the left bank of the river past GISEH (close to Cairo), where the vast pyramids stand, the hugest pieces of mason work ever put together, and nearly the highest. It runs past the ruins of Memphis, and on to ASSIOUT, 230 miles from the capital. Beyond this passengers must travel by the picturesque lateen sailed Nile



FIG 26 — A STREET IN CAIRO

boats (or *dahabeahs*). The ruins of Thebes (the hundred-gated city) on the left bank, opposite the ancient temples of Karnak and Luxor, are amongst the grandest in the world, and stand about half-way between Assiout and the First Cataract. This cataract is caused by a great ridge running across the river-bed, composed of a kind of granite called syenite, from the neighbouring town of ASSOUAN (anciently *Syene*). Here there are enormous deserted quarries with blocks of stone cut out in the

time of the Pharaohs, but never carried away. At the Second Cataract, 200 miles to the south-west, stands WADY HALFA (i.e. *Valley of Esparto Grass*), now the frontier town.

540. The Suez Canal, a wide deep ditch 100 miles in length, runs south from the modern harbour PORT SAID (built on about fifty islets at the east end of the delta). It passes ISMAILIA, which stands on the shore of Lake Timseh, a brackish pond converted by the canal works into a large inland harbour, and terminates at SULZ on the Red Sea in a desolate parched region, all the fresh water being brought by a special sweet-water canal from the Nile. At night the canal is lighted by electricity, and steamers pass through with a powerful electric light at the bow. More than 3000 steamers pass through every year, but a sailing vessel is scarcely ever seen in the canal.

541. *Desert Egypt*.—All Egypt west of the Nile is in the *Libyan Desert*, where there are a few date-growing oases. But most of it is a region of vast sand dunes 500 feet high, and wide level plains where the mirage or appearance of lakes or palm trees is seen more often and more vividly than anywhere else. No one has ever succeeded in crossing this desert.

542. *Egyptian Sudan*.—The *Sudan*, or Land of the Blacks, is the name given to the broad strip of Africa where the pure negroes live, stretching from the Kong Mountains in Guinea to the Red Sea along the slope separating the Northern from the Great Plateaux. The eastern part of it, formerly subject to Egypt, is at present (1889) in a state of revolt and war. In *Nubia*, anciently known as *Ethiopia*, KHARTOUM stands on the tongue of land where the White and the Blue Nile join. In times of peace this is the chief trade centre for caravans from the Mohammedan negro kingdoms of KORDOFAN and DAR-FOR, far to the west on the Jebel Mara hills, and from SUAKIN and other parts of the Red Sea on the east, as well as for steamer traffic—interrupted by the cataracts—~~to the Red Sea~~. In 1885 the heroic General Gordon, who had held Khartoum for two years with a weak garrison against the rebels on behalf of the Egyptian Government, was overcome by treachery, and lost his life. Still farther south, close to the sources of the Nile in the Victoria

Nyanza, another noble European officer, Emin Pasha, was cut off at the same time from all communication with the outer world, and no certain news of him reached Europe until four years later, after Stanley had met him by a six months' journey through tropical forests from the Congo.

#### ABYSSINIA.

543. **ABYSSINIA**, on the mountainous north-eastern corner of the Great Plateau, has an area rather greater than that of the United Kingdom. The cool flat high plains, with abundant pasturage, are separated into island-like masses by gorges like the American cañons, through which torrents pour thousands of feet below on their way to the Nile. The climate is mild on account of its elevation, and the heavy monsoon rains from April to September make it very fertile. The name comes from an Arabic word *Habesh*, meaning mixed, because of the mixed population. The largest number are a Semitic race whose religion is a debased form of Christianity, but there are many Jews and Mohammedan negroes from the south. They are all ignorant and superstitious. In some parts of the country fresh raw meat is thought such a delicacy that steaks are often cut out of a living cow.

544. **Abyssinian Towns.**—The chief town is GONDAR, built in groups of half-ruined houses separated by great rubbish heaps, over which panthers prowl at night. MAGDALA, a fortress on a lofty and almost inaccessible cliff, was captured by a British army in 1867 sent out to rescue some European prisoners held by the Abyssinian monarch, the *Negus* or king of kings, as he called himself. The country was again left to the quarrels of its petty chiefs. The trifling exports pass through MASSAWA, a town now occupied by the Italians, and built on a small island in the Red Sea. It is insufferably hot, and every drop of drinking water must be brought in pipes laid on the bridge across the narrow strait from the mainland.

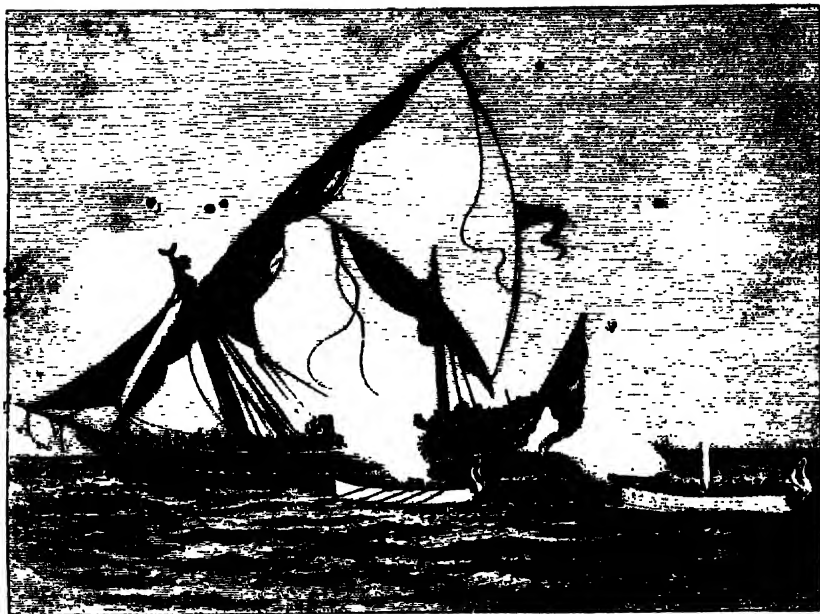


FIG. 27.—BRITISH MAN-OF-WAR'S CUTTER AND STEAM-LAUNCH CAPTURING AN ARAB SLAVE DHOW.

## CHAPTER XXVII

### COUNTRIES OF CENTRAL AFRICA

545. On the north shore of the Victoria Nyanza, where the Nile issues from the lake, the powerful empire of **UGANDA** contains numerous villages of an agricultural people, not negroes like those of the Sudan, but belonging to the brown Bantu race, and ruled over by a cruel and despotic king.

546. Between the lake and the east coast stretches the most mountainous tract of Africa, including the mighty mountain **Kilimanjaro**, on whose slopes herds of wild elephants wander. This is the home of the warlike **MASAI**, who delight in plundering other tribes and making slaves of the surrounding people weaker than themselves. The women are



ment themselves with iron wire, and are very proud when they carry 20 or 30 lbs. weight of it coiled round their legs and arms. The region north of this mountain is now under British protection, and the region south of it under German protection, in name at least.

**547.** The little island of **ZANZIBAR** contains the town Zanzibar (100), which is a station on the telegraph cable from Cape Colony to Europe, and mail steamers call regularly at its harbour. \*It is a busy town thronged by a motley crowd of Africans, Arabs, Indians, and Europeans, and is the chief centre for collecting ivory, indiarubber, oil-seeds, dye-woods, and other products brought down to the east coast of Africa by gangs of slaves and sent across in Arab dhows. The Arab Sultan of Zanzibar also governs a strip of the continental coast 10 miles wide, reaching as far south as Cape Delgado. **BAGAMOYO**, across the narrow strait from Zanzibar, is the point where caravans of negro carriers set out for **UJJI**, on Lake Tanganyika, 600 miles to the west. This is a six weeks' journey, which cannot be shortened by using beasts of burden, as the tsetse fly abounds on the swampy plains. The route to the lakes and all the surrounding country is under German protection.

**548. Mozambique.**—From Cape Delgado to Delagoa Bay the Portuguese keep the possessions they seized when their first bold sailors rounded South Africa 400 years ago. The colony, which is called **MOZAMBIQUE**, is badly governed, and very unhealthy. ~~Mozambique~~, on a little island at the apex of the Mozambique outcurve, is the capital, but **QUEILMANE**, built on a dreary shore of mud near the mouth of the Zambesi, is more important for the trade of the country.

**549. The Lakes.**—Steamers run up the Zambesi for 100 miles, and then up its northern tributary, the Shiré, for 150 miles as far as Murchison Falls. A road 60 miles long was made by the missionaries, and goods can be carried by it past the falls and on to the mission station of **BLANTYRE** (named after the native town of Livingstone). The discomforts of a journey along this road are great on account of its steepness and the heat, but still more since the tsetse fly makes it impossible to

use cattle or horses, and everything must be carried by men. The spear grass grows luxuriantly, and its barbed seeds, as sharp as needles, work their way through the thin clothing and pierce the flesh of the passengers. Yet a little steamer, the *Ilala* (named after the place where Livingstone died), was carried in pieces along this road, and put together again on the river above the falls, and this vessel now keeps the mission station of LIVINGSTONIA, on Lake Nyassa, in communication with the world. The hippopotamus and crocodile are common in this region. The Stevenson Road, another triumph of missionary enterprise, crosses the high land between Lake Nyassa and Lake Tanganyika, so that from the Zambesi the whole of east Central Africa is thrown open to trade. Unfortunately, the only trade that really flourishes as yet is that in slaves, and the peaceful villages of the Bantu people are liable at any moment to be attacked by regiments of Arab slave-traders, who break down the slender palisades, slaughter the men without mercy, and drive off the women and children to the coast, leaving a broad path of desolation wherever they pass.

**550. Western Sudan**—A group of despotic negro kingdoms clusters round Lake Chad in the very centre of the Sudan. Many large towns and innumerable prosperous villages peopled by pure negroes, who have been converted to Mohammedanism by the Arabs, are built along the fertile banks of the rivers flowing into the lake, and of the Bahr-el-Ghazal, which flows out of it. **BORNU**, **KANEM**, and **BAGIRMI** are the most important. They are well cultivated in many parts, and export ivory and ostrich feathers. **SOKOTO**, one of the western states, separates this group from the river Niger. The old dangerous caravan tracks from the central Sudan, across the Sahara to Tripoli, are being less used, while the shorter road through Sokoto is becoming more frequented, and the warlike Sultans of these small kingdoms are becoming great traders.

**551. Niger Protectorate**.—A strip of country 30 miles wide on both sides of the Niger and its great tributary the Benue, has been placed under British protection. The *Royal Niger Company* governs this district, and has founded an active

trading town at **LÓKOJA**, where these two navigable streams unite. Their large light steamers sail up the **Niger** to **RABBA**, more than 600 miles from the coast, and close to the place where **Mungo Park**, one of the first African explorers, died. Here the way is blocked by rapids, but above them steam-launches and boats can run on to a port close to **TIMBUCTOO**, which is one of the chief trading centres in Africa

#### STATES OF THE WEST COAST.

**552.** A chain of European colonies extends along the west coast of Africa south of the barren Sahara. The French possess the whole basin of the Senegal River. Their colony of **SENEGAL** stretches far inland to the negro town of **SEGOO**, on the Upper Niger. From **DAKAR**, a trading port close to Cape Verde, which has been occupied by the French for 400 years, a railway now runs 150 miles northward through cultivated plantations and forest lands to **St. Louis**, the capital, at the mouth of the Senegal River.

**553.** The British Crown colony of **SIERRA LEONE**, one of the most unhealthy places in the world, is grimly called "the White Man's Grave." Its capital, **FREETOWN**, was built, as the name indicates, to shelter slaves set free by the British cruisers. South-west of it lies the **Grain Coast**, named from the "Grains of Paradise," a kind of pepper which is largely exported.

**554.** The republic of **LIBERIA** (*i.e. Land of the Free*) was founded here by a philanthropic society in America for slaves liberated after the Civil War. Its seaport and capital, **Monrovia**, is named after President Monroe of the United States, who also gave his name to the Monroe Doctrine (§ 429). The north shore of the Gulf of Guinea is known successively as the **Ivory Coast**, where elephants were once numerous, though they are now exterminated; the **Gold Coast**, where gold-dust is found in the river-beds, and the **Slave Coast**, round the Bight of Benin, where cargoes of wretched negroes used to be shipped to America in the old slaving days.

**555.** **GOLD COAST** is a British Crown colony on the Gulf of Guinea, and the gold obtained there during last century

gave its name to the English *guinea*, or twenty-one-shilling piece, which was made from it. **CAPE COAST CASTLE** is an important fortified town, rising above the low swampy shore; but **Accra**, almost exactly on the meridian of Greenwich, is the capital. The **Slave Coast** contains the German settlement of **TOGO-LAND**, and the little British colony, **LAGOS**, which extends eastward to the Niger protectorate.

556. On the wooded slope up to the Kong Mountains behind Gold Coast, the barbarous kingdom of **ASHANTI** is now cut off from the coast. Its capital, **Coomassie**, was destroyed by a British expedition in 1874, and many of King Coffee's treasures, including the royal umbrella, were brought to Britain as curiosities. **DAHOMY**, on the slope behind the Slave Coast, with its chief town **Abomey**, is, like Ashanti, a constant scene of the most frightful cruelties inflicted by the despotic king. In some of the terrible religious ceremonies the King has been known to slaughter so many of his innocent subjects that he could sit in a boat floating in their blood. The people in both these unhappy countries are fetish-worshippers of a very low kind, but they are brave in battle, and hold human life very cheap.

557. **Oil Rivers.**—The Old Calabar and the Cameroon Rivers, which flow into the Bight of Biafra, are called the oil rivers, or account of the immense number of oil-palm trees which line their banks, and the quantity of palm oil which is brought down in native canoes from the interior.

The Germans lately annexed a stretch of coast, the **CAMEROON COLONY**, in which the wide Cameroon River opens, and where some of the highest mountains of the west coast rise near the shores. On the south it is bordered by the French **CONGO TERRITORY**, reaching south to the great river Congo, but very little is known of the interior of these great countries.

558. **Products of the Guinea Coast.**—All the lands round the Gulf of Guinea are alike in being hot, damp, and unhealthy. Palm-oil is the chief export. The oil-palm bears great clusters of a plum-like fruit, which, when crushed, yields a thick, yellow, buttery oil, used for soap-making and for

poses. The merchants who were attracted by the abundance and cheapness of the oil, also trade for gold-dust, indiarubber, ground-nuts, from which an oil is made, kola nuts, which supply a drink like cocoa, and the splendid coal-black wood of the ebony tree.

559. The **CONGO FREE STATE** was founded in 1884, and is the largest country in Africa, nearly ten times the size of the United Kingdom. Its coastline only extends a few miles



FIG. 28.—AFRICAN EXPLORER ON THE MARCH.

on each side of the river-mouth, but the territory spreads over the whole depression of the Great Plateau eastward to the shore of Lake Tanganyika. This vast region is being gradually explored and put under the charge of European officers, who try to see that no slave-trading is carried on, and no strong drink or gunpowder sold to the natives. Boma, the capital, on the right bank near the river-mouth, is a neat little town of small wooden houses, occupied by agents of all nations, each with a tall staff, on which the national flag of the occupant is hoisted, for the Congo is an international highway, and ships of any

nation may sail up it freely. A good road leads round the Livingstone Falls to LEOPOLDVILLE (called after Leopold II, King of the Belgians, who is also monarch of the Congo Free State). EQUATORVILLE, at the point where the river crosses the equator, ARUWINGU, farther east, on the river whence Stanley set out on his long journey to relieve Emin Pasha, and several other small groups of traders' houses, are established along the river.

560. **ANGOLA**, a great Portuguese colony, extends south along the coast from the Congo for 800 miles, and reaches for an unknown distance into the interior. Its chief towns are the unhealthy, little trading ports of ST. PAUL DE LOANDO and BENGUELA, once great slaving harbours, and now stations on the telegraph cable which extends along the coast from Europe to the Cape. From Loando a railway is being made inland towards AMBACA, through carelessly managed plantations of coffee, tobacco, cotton, and sugar.

561. The hot coast strip farther south and the barren terraced mountains behind it rising to the Kalahari desert have been seized by the Germans, and form colonies known as **DAMARALAND** in the north, and **GREAT NAMAQUALAND**, which is bounded by the Orange River, in the south. The territory extends inland to 20° E. In the centre of the long coastline there is a small British settlement round **WALFISCH BAY**, which got its Dutch name from the *whales* that used to visit it. As this is a free port and the only good harbour, most of the goods to and from the neighbouring German districts pass through it.

## CHAPTER XXVIII

### COUNTRIES OF SOUTHERN AFRICA

**562. History.**—In the middle of the seventeenth century, when Holland was the chief trading nation of Europe, and had large possessions in India, a party of Dutch settlers made a station close to the Cape of Good Hope in order to supply ships passing to India with fresh provisions. After many changes, during which the Dutch-speaking population greatly increased, the little colony of the Cape of Good Hope was made over to the United Kingdom in 1814. British emigrants soon arrived to settle on the good farming and pasture land, and many of the Dutch Boers (*i.e.* farmers), who disliked the new government, and highly disapproved of emancipating the slaves, set out in their great ox-waggon and “trekked” northward over the mountain terraces, far across the high plain, where they forded the Orange River and set up an independent republic, the *Orange Free State*. Another band of Boers moved eastward round the coast through Kaffirland to Natal, where they fought for land against the powerful Zulu nation. But the British annexed the country, and so the Boers left their new home, crossed the Drakenberg Range, and set up the *Transvaal* (or *Bechuanaland*) *Republic*. This, after twenty-five years of freedom, was annexed by the British in 1877, but a few years later the Boers revolted, and were again allowed to carry on their government for home affairs as their own was. Meanwhile a war was made a separate one, and from time to time great quantities of native lands were added to the British, until now

British influence extends along the west coast to the mouth of the Orange River, and east of the German boundary line of 20° E, right on to the Zambesi. This includes most of the Kalahari desert under the rule of the Crown colony of *Bechuanaland*, and the protected district north of the Limpopo called *Matabeleland*.

#### CAPE COLONY

**563 CAPE COLONY** is bounded by the Orange River on the north, but close to the Boer republics its border was stretched northward beyond the Vaal River, in order to include the greatest diamond fields in the world. It is nearly twice the size of the United Kingdom, and the climate on the high plains is always like the finest weather of southern England. The inhabitants are very mixed: towards the west the native races are ugly yellow-skinned **Hottentots** and degraded **Bushmen**; but to the east the handsome **Kaffirs** and **Zulus**, who belong to the Bantu race, are the finest people of the Black type. Unlike other uncivilized races, these natives are increasing in numbers and prosperity, as they make willing and capable servants to the white farmers. In the eastern part of the country the farmers are mainly English, but in the west they remain almost entirely Dutch. The prevailing religion is that of the Dutch reformed church, and in the parliament which is elected by the people, speeches may be made either in Dutch or in English. For defence there is a small volunteer army—the Cape Mounted Rifles—and a strong force of mounted police, but every able-bodied man is liable to be called upon to serve in case of war.

**564 Surface**—The mountain ranges that buttress the terraces of the high plain are called by separate names in different parts. And the sweeping mountain curve of the first terrace is cut by rivers flowing across it into short ranges, known successively from west to east as the **Olifant** (or *Elephant*) **Berge** (i.e. *Elephant Mountains*), the **Bokkeveld** (or *Antelope* **Berg**), the **Zwarte** (or *Black*) **Berge**, and the **Suur** (or *Sour*) **Berge**. The second and higher range forms the watershed between the coast streams and those of the Orange Basin, and is named from west to east the



**Roggerveld** (*Rye-field*), **Berge**, the **Nieuwveld** (or *New Field*) **Berge**, the **Winter Berge**, the **Sneeuw** (or *Snow*) **Berge**, the **Storm Berge**; and then uniting with the southern ridges, to form the great **Draken Berge** or *Dragon Mountains* that run northward.

The **rainfall** is greatest on the south and west, where the south-east trade winds strike the mountain slopes; but on the high plain to the west, and on the wide level terraces between the successive ranges, there is so little rain that **maize** and **wheat**, the chief grain crops, can only be grown near wells, the rivers, like those of Australia, being mere dry stony channels most of the year.

**565. Animals and Plants.**—**Sheep** of the fine-woolled **Merino** breed flourish greatly, and their wool is, next to diamonds, the most important article of export; **Angora goats** are also kept for their hair. In the settled regions there are good roads, fine bridges span the rivers, and three separate railway systems have been laid down by Government, crossing the colony from south to north. But huge lumbering **waggons**, drawn by from four to ten, and sometimes as many as twenty pairs of **oxen**, are alone used to cross the broad level high plains, where there are neither roads, railways, nor enclosures of any kind. The traders live for months at a time in their waggons, as they visit the scattered *kraals* or villages of the friendly native tribes on the outskirts of the colony. Vast herds of antelopes bound over these dry treeless plains, and the striped zebra and quagga are sometimes seen, but elephants, giraffes, and lions have been driven beyond the borders. The wild **ostrich** has also become scarce, but since feathers are always wanted, ostrich farms have been established, and now there are more than 150,000 tame ostriches carefully tended and fed, the beautiful curling tail-feathers being cut twice a year when they reach a certain size. In order to prevent this industry spreading to other countries a duty of £100 is charged by Government on every live ostrich, and £5 on every fresh ostrich egg, sent abroad. **Wine-making** is gradually becoming more and more important, as no other place in the world produces vines so luxuriantly.

**566. Towns on the Western Railway.**—**Cape Town** (60), the oldest settlement and the capital, faces the north, below a fine semicircular sweep of hills on Table Bay, where an artificial harbour has been made. To the west a mountain, grandly shaped like a lion's head, fronts the sea, and to the south-east the famous **Table Mountain** raises its flat bare summit above a belt of trees. When the cold south-east wind blows, mist rolls across the summit and droops over the slopes like a gigantic table-cloth. Cape Town remains very Dutch in appearance and people. The houses have all fine gardens, and the country round is famous for the beauty of its wild flowers, which include hundreds of different kinds of heaths and geraniums. The astronomical observatory at Cape Town is the most important in the southern hemisphere. A railway runs south for 15 miles through a rich vine-clad valley, in which the lovely village of **WYNBERG** (*i.e. Wine Mountain*) is a favourite country resort, to **SIMON'S TOWN**, on an indentation of False Bay, where there is a British naval harbour. About 25 miles east of Cape Town stands **STELLENBOSCH**, an old Dutch town. The *Western Railway*, which is the longest line in the colony, runs north-east from the capital up the steep slope of the Black Mountains, and across the dry level plain of the *Great Karroo*. This is an expanse of dreary ash-gray bushes, but is overspread with a short-lived carpet of green after a chance shower. Most of the bushes are prickly, and one of them is named the "Wait-a-bit," because of the way its sharp claw-like thorns hold back a traveller trying to push his way through on foot. Beyond the Great Karroo the railway crosses the watershed over the Winter Mountains, and after a junction with the Midland line at **DE AAR** reaches the Orange River near **HOPETOWN**, and crosses it to Kimberley. Hopetown is the last town on that stream which flows on to the sea for more than 700 miles through deep gorges and over magnificent cataracts far below the level of an almost uninhabited country.

**567. The Diamond Fields.**—The terminus of the *Western Railway* is **KIMBERLEY**, in *Grignaland West*, 650 miles from Cape Town, now one of the chief towns in Africa, with broad

tree-planted streets, lighted by electricity at night, and supplied with water by pipes from the Vaal River, 20 miles to the north. When diamonds were first discovered it sprang into life as a town of tents, and now the most remarkable mine in the world opens close to the busy well built streets. Originally, there was a small hill, but this was gradually dug down in order to get at the blue clay in which the diamonds are found like currants in a cake. Now there is a large open quarry of great depth, with pits sunk beneath the floor of it, and tunnels bored into the clay on every side. One great company works the whole, employing thousands of natives to shovel the clay into big iron buckets, which are then hauled up rope-railways to the top of the bank, and the contents carefully searched for diamonds. The diamonds are so small and easily hidden that the only plan to prevent robbery is to keep the diggers close prisoners during the few months they agree to work. When the diggers get out at last they are carefully searched to see if they have not concealed any rough diamonds in their hair or mouth, or even in their ears or under their eyelids. People who buy stolen diamonds are severely punished, and in the convict prisons there are always a number of men with I. D. B., for "Illicit Diamond Buyer," stamped on their clothes. GRIQUA TOWN, far to the west of Kimberley, was the first settlement of the *Grignas* or half-breeds descended from Boers and Hottentots, who gave their name to the district.

Copper-mines are worked at **POKIEP** in the north-west of the colony, and a steep railway, 90 miles long, worked by mules instead of locomotives, carries the ore to the little Atlantic harbour of **PORT NOLLOTH**, where it is shipped to England.

**568. Towns of the Midland Railway.**—East of Cape Town the most important farming centres on the well-watered seaward mountain terraces are **RIVERSDALE** and **OUDESHOORN**, the latter on the small Olifant (*i.e. Elephant*) River, which flows from the Black Mountains. **PORT ELIZABETH**, a thoroughly English town on Algoa Bay, is the chief harbour of the colony for foreign trade, and is very lively in the wool-shipping season. It is the terminus of the *Midland Railway*, one line of which

runs north-east for 200 miles to GRAAF REYNET, in a fertile valley where several streams from the Snow Mountains unite to form the southward-flowing Sunday River. From the beauty of this little town and its green fields and trees, shut in by the barren high plain stretching to east and west, it is called "the gem of the desert." GRAHAMSTOWN, farther east, has a particularly healthy and delightful climate. The surrounding grass land of the Sourfield Mountains is not well suited for sheep, so the chief live-stock kept in the neighbourhood are ostriches, which are hatched from the egg in artificial incubators. A short line runs from Grahamstown to the little harbour PORT ALFRED, another to Port Elizabeth, and a third strikes inland to the Kimberley line with a branch to COLESBERG in the north, from which a fine road leads across the Orange River into the Free State.

• 569. **Towns of the Eastern Railway.**—Still farther east, the harbour of EAST LONDON, on the Indian Ocean, is one of the most exposed and dangerous in the world. It serves, however, as the port of KING WILLIAM'S TOWN (usually called *King* for shortness), which lies 30 miles inland, and is the chief centre for trading with the Kaffirs, who occupy the fine grazing lands to the north-east. The *Eastern Railway* runs north-westward from King, and surmounts the watershed by a pass in the Storm Mountains more than a mile above sea-level. It then descends slightly through the coal-fields of MOLTENO, where a poor quality of coal is abundant and can be reached by tunnels bored into the hillside. The terminus is about 250 miles from East London at the village of ALIWAL NORTH, on the Orange River, where a good bridge for ox-waggons crosses to the Free State. This carries most of the wool and grain exported from the republic to the seaports, and most of the manufactured goods from Britain that are required by the Boers.

570. **BASUTOLAND**, on the high plain west of the Dragon Mountains, is a British Crown colony, containing the best wheat-growing land in Africa. It is cultivated mainly by the native **Basutos**, a particularly brave and persevering race, whom the missionaries have been successful in civilising and teaching habits of industry.

**571. BECHUANALAND** is a large Crown colony on the Great Plateau, reaching from the Orange River far to the north. Although it is separated from Basutoland by the two Boer republics, the people are a similar Bantu race. They also have been greatly civilised by the missionaries, whose headquarters for many years have been at KURUMAN in the south. SHOSHONG, within the tropics in the extreme north-east, is a native town of huts on a perfectly level plain with mountain ranges rising steeply to the north. It is a station of traders with **MATABELELAND**, which stretches north-eastward to the Zambesi, and with the country round Lake Ngami on the north-west. In all this region drink traffic is strictly forbidden. Among the Bechuanas and all other Bantu tribes in the south of Africa, the keeping of cattle is considered a very honourable occupation, and their women are supposed to be such inferior creatures that they are not allowed to come near a cow on any account. Amongst the yellow Hottentots, who live more to the east, the women always milk the cows, which the men would consider a degrading task.

#### NATAL.

**572. NATAL** (*i.e. Birthday*) received its name from being discovered on Christmas Day 1497 by Vasco de Gama. It covers the picturesque and thickly wooded mountain buttresses which radiate out towards the sea, from the great Drakenberg Range, and is a colony governed like western Australia. Although only about one-tenth as large as Cape Colony, it is more densely peopled, chiefly by Kaffirs from the south and Zulus from the north, who flocked in to take refuge from their tyrannous chiefs. These Bantu tribes have their own huts and plots of land, where they keep cattle and sheep, and grow enough "*mealies*" (maize) to live on in great comfort; so they do not care to work for wages. Along the sea coast the whites have laid out large plantations of **sugar-cane**, and tea-trees have been tried as an experiment. For the cultivation of these crops it is necessary to bring coolies from India, who, after serving the term of years

they engage for, usually settle down as shopkeepers in the towns

**573 Towns of Natal** — PORT NATAL stands at the narrow opening of a wide shallow bay, and is the deep-sea harbour of DURBAN (20), the largest town in the colony, and the most active in trade. The gardens of Durban are beautiful, and broad leaved banana trees and tall tufted bamboos give greenness and shade to the wide sunny streets. The little town of VUKULAM, on the coast, 20 miles north by rail, and ISIPINGO, about the same distance to the south, are the chief centres of sugar growing. The main line of railway, 200 miles long, strikes inland to the north west, through grand scenery of gorge and glen, climbing the mountain slopes close up to the lofty Dragon Mountains, beyond which lie the Orange Free State and the South African Republic. As the railway does not yet reach these countries, ox waggons carry the traffic in British manufactures from the terminus, and bring back wheat, wool, and gold, from the Boers. The chief town on the railway is the capital, Pietermaritzburg, which was named after the two first Boer emigrants from Cape Colony. It stands on a fertile plain entirely surrounded by hills about 60 miles from Durban. Several tributaries of the Tugela River, which forms the northern boundary from Zululand, are crossed by the line, and their valleys contain valuable deposits of coal. The best mines have led to the growth of a little village, which took the name of NEWCASTLE, and lies 50 miles north of LADYSMITH, the present railway terminus. A little farther north, at the point where Natal and the two Dutch republics meet, Majuba Hill was the scene of a great victory of the Boers over the British troops in 1881, which led to the liberation of the South African Republic.

**574 ZULULAND**, north of Natal, had to be annexed as a British protectorate. For generations the Zulus were ruled by military kings, who kept the whole nation ready for war, and every man in the immense standing army was a tried hero. Though armed only with *assegais* (hand spears) and narrow shields, they were so thoroughly drilled that they not only conquered all the

other Bantu nations near them, and kept the Boers at a distance, but have even defeated British troops in a fair battle. Since the capture and death of their last king, Cetewayo, however, the nation, as a whole, has taken to the keeping of cattle and to agriculture, and so has become less of a terror to its neighbours. The kraals or villages are usually large groups of beehive-shaped huts surrounding an enclosure, where the cattle, which form their chief wealth, are kept at night.

### THE BOER REPUBLICS

**575** The **ORANGE FREE STATE** is about twice as large as Natal, and is all contained between the Orange River on the south, and its northern tributary the Vaal on the high plain sloping westward from the Dragon Mountains. Although a few diamonds are found near the south western frontier, sheep are the chief wealth of the country, and as there are no railways and few roads, the old ox waggon is the only way of conveying goods. The republic was tolerated by the British Government only on condition that the natives should not be made slaves, but the Boers still treat the blacks (as they call the yellow Hottentots and the brown Bantus) badly. No native is allowed to vote for members of the *Versaand* or National Assembly, nor can they live within a certain distance of the whites. **Bloemfontein**, the capital, and almost the only town, has therefore a separate little suburb of miserable huts occupied by the despised native races.

**576** **Surface and Products**—The South African Republic, or the **TRANSVAAL**, as it used to be called, is nearly as large as the United Kingdom, although it contains probably not more than half a million people. The Vaal River, Natal, and Zululand are the southern boundaries, on the east it extends across the Drakenberg watershed and adjoins the Portuguese possessions, and on the west and north the curving Limpopo, which flows to Delagoa Bay, marks it off from Bechuanaland. The east and centre of the country are high and mountainous, the rest of the land slopes towards the rivers in wide plains.

The Drakenberg, or Dragon Mountains, contain large areas of gold-bearing rocks, but the rest of the country is important chiefly for its grass and the good soil and climate which enable wheat to be largely grown and exported. Coffee and cotton are raised on a small scale in the tropical northern valley. Sheep and Oxen are the chief live-stock, but ostriches are often kept on the farms. The land round the Limpopo River and along nearly the whole eastern frontier is useless for stock-raising, because the tsetse fly lives there. This makes it almost impossible to drive an ox-waggon across the dangerous country for the short distance to Delagoa Bay, which is the nearest outlet to the sea. All the exports and imports have therefore to be carried hundreds of miles across the Orange Free State, or through Natal, to the stations of the British colonial railways. But a line has been opened by the Portuguese from their seaport Lorenzo Marquez, on the north shore of Delagoa Bay, for 50 miles to the borders of the South African republic, and this will soon be extended by the Boers to their chief towns. Only white men can claim political rights or possess land in this republic. The government is, like that of the Free State, controlled so far as regards external politics by a British resident.

**577. Towns of the Transvaal.**—Pretoria, the capital, situated on a high hill-girdled plain at the watershed between the Limpopo and the Vaal system, is named after the first president. POTCHERSTROOM, on a tributary close to the Vaal River, is a small town; its streets are planted with weeping willows, which were brought from St. Helena. Between these towns the gold-mines of *Wit-watersrand* caused the village of JOHANNESBURG to spring into existence and rapidly expand into a town. On the eastern slope of the Drakenberg Range the still richer *De Kaap* mines have similarly given rise to BARBERTON, 300 miles by coach from Durban, but close to the new Delagoa Bay railway. Hotels, drinking shops, theatres, and newspaper offices have risen up among these lonely African mountains, just as they did in the deserts of California and the plains of Victoria, and probably here also the riotous camps and the incessant clatter of quartz-stamping machinery will give place to quiet, well-



ordered, and prosperous towns in the course of a few years. English is the chief language on the gold-fields, but Dutch prevails throughout the republic. The Boers, as a rule, prefer to live far apart on their own vast estates, surrounded by their cattle, sheep, and black servants, and do not care to form villages.

#### MADAGASCAR.

**578. Surface.**—**MADAGASCAR** is one of the largest islands in the world, being twice the size of the United Kingdom, and fully 1000 miles long between Cape Amber on the north and Cape St. Mary on the south. The east coast is nearly straight, as it is fringed with coral reefs which fill up many of the natural bays, but the west coast, facing the Mozambique Channel, is much indented. The island forms one great high plain which slopes in abrupt terraces to the east coast. Innumerable short rivers, well fed by the rains brought by the south-east trade winds, trench those slopes deeply with valleys. To the west the land dips gradually, and is traversed by several long rivers, the chief of which, the Ikopa, flows north-west for 500 miles.

**579. Climate and Animals.**—The configuration is thus like Africa, and the resemblance holds good of the climate also. The coast strip all round is hot and fever-haunted, while the central high plains are cool and favourable to health. Both coast strip and mountain slopes are covered with dense forests full of strange tropical trees and flowers, and inhabited by animals of several kinds. Of these the *lemurs* are the most peculiar, and the quaint *aye-aye*, which resembles a monkey, a rabbit, and a squirrel all in one, is often to be seen, its long forefinger, shrivelled almost to a bone, being used for picking the insects it feeds on out of narrow cracks in decayed trees.

**580. People and Government.**—The chief race of people on the island are the *Hovas*, who appear to belong to the Malay division of the Yellow type. They live on the high plain, and greatly look down on the darker races who inhabit the lower ground. The government of the *Hovas* is a mild despotism exercised by a king or queen. Christianity is now

the state religion, education is compulsory, and the sale of strong drink is prohibited; but the Government is not strong enough to enforce these laws except in the central province. Great advances have been made in European civilisation, but the whole island has been compelled, against the will of the people, to accept French "protection"—that is to say, the French alone manage the foreign affairs of the country. Cattle and sheep are largely raised by the Malagasy people, and rice is the chief grain crop cultivated, but sugar and cotton are grown in the hot belt, while coffee and tea plantations have been laid out on the higher ground. A great deal of food material is exported to Mauritius. As yet there are neither railways nor roads.

581. **Towns.**—**TAMATAVE**, on a bay in the north-east, is the chief seaport; it was once marshy and unhealthy, but the marshes have been drained and planted with health-giving eucalyptus trees, and Europeans can now safely live there. A footpath leads inland for 200 miles up the steep mountain slopes to the capital, and all goods are carried on the backs of half-naked porters, who belong to a special carrying tribe. As the result of generations of this kind of work the children are born with thick pads of skin on the shoulder-blades, which prevent the loads they soon learn to carry from hurting them. It takes ten days to reach the capital, Tananarivo, in this way, but there is a telegraph line for messages. The name *Tananarivo* means "here the thousand villages," and in fact the population of 100,000 is spread through a number of adjacent villages beautifully placed on the slope of a steep hill, where the royal palace stands. The precipitous face of this hill was the national place of punishment, and hundreds of the first Christians were hurled over the cliffs by the heathen monarchs of forty years ago. The houses are all small, and a well-to-do family requires several of them; they are all built facing the west, the direction in which the river Ikopa, which rises near the town, flows. **MOJANGO**, the second seaport, stands at the mouth of this river on the north-west coast, and steamers can run up for about 60 miles into the interior, the rest of the long journey to the capital being made by canoe and on foot.

## DISTANT ISLANDS.

**582. Islands in the Indian Ocean.**—Five hundred miles east of Madagascar a little group of islands was discovered by a Portuguese sailor, Mascarenhas, on his way from the Cape to India, and they have since been known as the Mascarenes. **MAURITIUS** is the chief island of the group, and was first settled by the Dutch, who named it after their Prince Maurice. It was then seized by the French, who called it *Isle of France*, and although it has been a British colony since 1815, French is still the common language. The larger neighbouring island, **Réunion**, remains a French possession. A stupid and clumsy bird, called the *Dodo*, was very abundant when the first settlers came; but the birds stood still to be killed, and the Dutchmen soon destroyed every one. As it lived nowhere else, the race of dodos has become extinct. **Port Louis** (60), the capital of Mauritius, on the east coast, is the terminus of several railways which spread over the island. **Sugar-planting** is the only industry, and is carried on wherever the ground is suitable; coolies from India supply the labour.

The **Seychelles Archipelago** is a group of small but singularly beautiful islands situated 900 miles north of Mauritius, but placed under the same government. The *Coco-de-Mer* (i.e. *Coco of the Sea*) palm grows there and nowhere else. Its fruit is a great double coco-nut, and the name was given it by the Portuguese, who found the nuts stranded by the sea on the coast of India, but were never able to discover whence they came.

**583.** Two little islands on the central ridge of the **Atlantic Ocean** were for a long time important calling stations for vessels going from England to India by South Africa. **ASCENSION**, a mountainous volcanic island in 8 S., is a station for supplying fresh food to British warships, and contains a naval hospital. The barren rocky surface has been cultivated with great care, and now grows grass for sheep, and crops of several kinds. **ST. HELENA**, about 700 miles to the south-east, is also a British colony, and lies 1200 miles from Cape Town. The

island is famous as the place to which the great Napoleon, whose career of conquest changed the political geography of the world, was banished in 1815, after the battle of Waterloo; and here he died six years after, his body being removed to France subsequently. The one port, JAMESTOWN, is the headquarters of an American whale fishery. The population, mainly of natives, is dense, but decreasing by emigration to Cape Colony. Still farther south is the lonely group of **Tristan d'Acunha**, where a few people of English descent live happily, although only visited by chance vessels once or twice in the year, and sometimes not seeing a stranger for years together.

STATISTICS\* OF THE COUNTRIES OF AFRICA ABOUT 1885.

Country.	Government.	Area in thousand square miles.	Population.		Average in million pounds.		Time at Capital.†
			Millions.	Per square mile.	Exports.	Imports.	
Egypt . . . . .	British control	11	7	6301	11	8	2.5 P.M.
Tripoli . . . . .	Turkish " "	399	1	2.5	..	..	12.55 "
Tunis . . . . .	French " "	43	2	48	0.7	1	12.40 "
Algeria . . . . .	French colony	133	4	33	7	9.5	12.12 "
Morocco . . . . .	Despotism	320	5	23	1.5	1.5	11.28 A.M.
Libya . . . . .	Republic	14	1	71	..	..	11.17 "
British West Africa	Crown colonies	16	0.5	31	1.5	1.5	....
French " "	Colonies	800	1	1.3	..	..	....
German " "	" "	345	0.3	0.8	..	..	....
Portuguese " "	" "	313	2	6	0.5	0.5	....
Congo Free State	Monarchy	1050	27	26	0.3	0.3	....
Cape Colony . . . .	Respons. col.	214	1.2	6	7	6	1.13 P.M.
Natal . . . . .	Repres. col.	21	0.4	23	0.9	1.5	2.2 "
Orange Free State	Republic	47	0.1	3	2	1	1.47 "
Transvaal . . . . .	" "	113	0.4	3	1	0.5	1.56 "
Portuguese East Africa	Colonies	380	0.3	1	0.2	0.3	....
Madagascar . . . .	French control	228	4	18	0.5	0.5	8.4 "
Zanzibar . . . . .	Absolute	..	0.5	..	1	1	2.37 "
Abyssinia . . . . .	" "	128	3	23	..	..	....
Mauritius . . . . .	Crown colony	0.7	0.4	508	3.5	2.5	3.50 "

\* Except for Egypt, Algeria, and British colonies " statistics are uncertain.

† At Greenwich noon.

‡ Density on peopled part of the country only.



FIG. 29.—THE ANTARCTIC ICE-WALL, AND ICEBERGS.

## CHAPTER XXIX

### THE ANTARCTIC REGION

584. The greatest unknown region of the Earth's surface lies round the south pole. No expeditions have been made in that direction since steamships came into use, but Ross and other brave navigators, in their voyages fifty years ago, discovered land at several points amongst the vast table-shaped icebergs that drift through the Southern Ocean. There is no doubt of the fact that a continent probably larger than Australia exists within the antarctic circle, and the name Antarctica has been given to it. It is covered with an ice-cap supposed to be about 2 miles thick in the centre, the glaciers from which launch the great icebergs. All round this region, which is always sealed in ice, the sea grows shallower towards the south; the material dredged up from the bottom is composed of worn fragments of rocks, and

these are of a kind that only occurs in continents and continental islands. Land has been sighted nearly due south of each of the continents of the southern hemisphere. The dreary fog-swept archipelago of the **South Shetlands**, 600 miles south of Cape Horn, lies not far from **Graham's Land**, which is crossed by the antarctic circle. Far south of Madagascar another glimpse was got of an ice-bound coast within the antarctic circle, known as **Enderby Land**. But it was south of New Zealand that Ross made his most remarkable discoveries. He pushed his sailing-ships on, following a rocky coastline, which he named **Victoria Land**, after the then youthful queen, to 78° S. lat. There, nearer the south pole than any human being had been before, he saw in the midst of the ice two huge mountains shooting up more than 2 miles above sea-level, and one of these was an active volcano. He named them **Mount Erebus** and **Mount Terror**, after the two ships of his expedition, and sailed away, bitterly regretting that he could find no safe harbour where his ships might stay until he could land and explore this wonderful region. No one has ever been so far south since. There is no inducement there like the search for a north-east or a north-west passage which drew navigators into the arctic regions; and only a special scientific expedition, sent out by some wealthy government, is ever likely to force its way far within the antarctic circle.

**585. Kerguelen Land**, more fitly called the *Isle of Desolation*, although only in 50° S., and midway between Africa and Australia, has many of the characteristics of the antarctic regions. The coast is carved into deeper fjords and more fantastic headlands than that of any other land in the world. Although its climate is now so wet and blustering that scarcely any plants grow, there are fossils in the rocks and thin layers of coal, which show that the temperature must have been much higher at one time. The strong-winged albatross which can follow ships more than a thousand miles from land, and innumerable hosts of smaller sea-birds make their home on the cliffs. A party of British and German astronomers lived for some months on the island in 1874, in order to observe the transit of Venus,

from which the distance of the Earth from the sun could be calculated, as this remote spot on the Earth's surface was one of the few well suited for making the observation. Kerguelen Land was once much larger than it is now, and the whole of the submarine bank which stretches for 300 miles southward, where Macdonald and Heard Islands stand, was probably part of it.

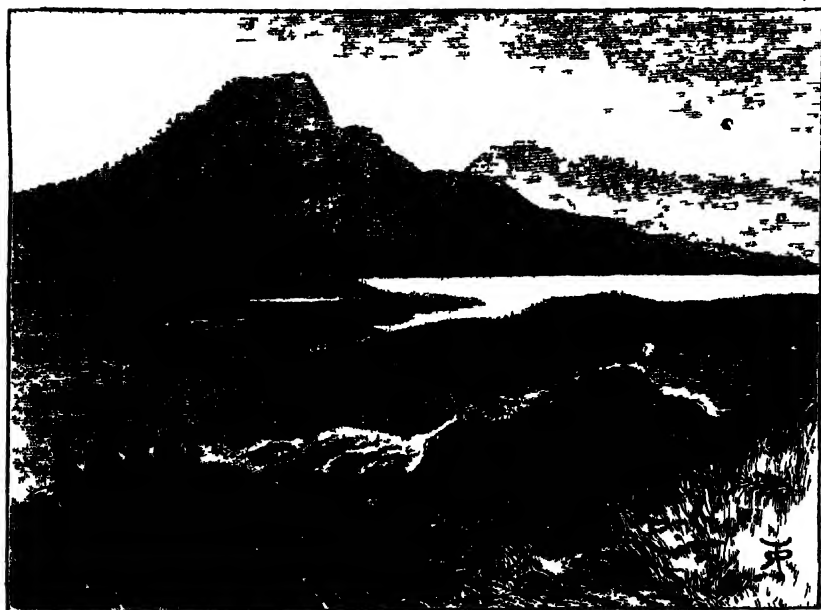


FIG. 30.—A VIEW IN KERQUELEN LAND. THE PLANT ON THE LEFT IS THE  
HARDY "KIRUTEN CABBAGE."

# INDEX

*References other than Place-names are in Italics. The Numbers refer to the Pages.*

- AALBORG, 79  
 Aar, *r.*, 102  
 Aarhus, 79  
 Aberdeen, 69  
 Abomey, 349  
*Aborigines of Australia*, 200  
 Aboukir Bay, 341  
 Abruzzo, *prov.*, 124  
*Abyssinia Region*, 26  
 Abyssinia, 341, 365  
*Acacias*, 199  
 Acadia, *old prov.*, 245  
 Acapulco, 260  
 Accra, 349  
 Achin, 175  
 Acconagua, *m.*, 293  
 Adam's Peak, 171  
 Adelaide, 214  
 Aden, 110  
 Adrianople, 134  
 Adriatic Sea, 53, 115  
 Aegean Sea, 53, 130  
 Afghanistan, 159-161, 193  
 Africa, 22, 32, 365  
 Agay, 274  
 Agni, 168  
 Aguilas, Bank and Cape, 326  
 Ahmedabad, 169  
 Ainos, 190  
 Aix-la-Chapelle, 110  
 Allas, 333  
 Alauina, 267, 276  
 Alaska, 143, 243, 276  
 Albania, *prov.*, 137  
 Albanians, 131  
 Albany, 216  
 Albany, N.Y., 263  
 Albutros, 367  
 Alberta, *prov.*, 251  
 Albert Nyanza, 329  
 Albury, 209  
 Aldan high plain, 58  
 Alert and Discovery, *cruise*, 242  
 Alexandria, 128  
 Aleutichorn, 101  
 Aleutian islands, 232  
 Alexandria, 841  
 Algeria, 336-338, 365  
 Algiers, 357  
 Algoa Bay, 356  
 Aliwal North, 357  
 Allahabad, 164  
 Alleghany, 264  
 Alleghany, *m.*, 205  
 Alma, 148  
 Almatien, 95  
 Alps, *m.*, 59, 101  
 Alsace-Lorraine, 109, 114  
 Altai, *m.*, 58  
 Altona, 111  
 Altyn-tagh, *m.*, 57  
 Amapala, 284  
 Amazon, *r.*, 294  
 Amazonia, *prov.*, 318  
 Amisaca, 351  
 Amber, 111  
 Amber, Cape, 362  
 Amboyna, 278  
 Amedeus, *lake*, 215  
 America, *first discovery*, 79  
 America, 22. See also North and South America  
 American race, 40, 238, 296  
 Amiens, 92  
 Amoy, 186  
 Amritsar, 169  
 Amsterdam, 82  
 Amur, *r.*, 164  
 Anatolia, *prov.*, 138  
 Ancona, 128  
 Andalusia, *old prov.*, 98  
 Andorra, 94  
 Angers, 92  
 Angola, 351  
 Angora, *prov.*, 138  
 Angostura, 323  
 Anguilla, 269  
 Anhalt, 109  
 Animals, *distribution of*, 41-44  
 Anjou, *old prov.*, 92  
 Annam, 173  
 Antananarivo. See *Tunani-ario*  
 Antaretica, 366  
 Antarctic Regions, 366-368  
 Anticosti, *is.*, 231  
 Antigua, *is.*, 289  
 Anti Lebanon, *m.*, 141  
 Antilles, 286  
 Antisana, *m.*, 301  
 Antwerp, 86  
 Apennines, *m.*, 59  
 Apia, 227  
 Appalachian, *m.*, 235  
 Apteryx, 220  
 Apulia, *prov.*, 128  
 Arabia, 58, 139, 193  
 Arabia Petraea, *prov.*, 140  
 Arabs, 139  
 Arafura Sea, 26, 196  
 Aragon, *old prov.*, 100  
 Araguay, *r.*, 295  
 Aral, *lake*, 69  
 Ararat, *mt.*, 139  
 Ararat, *Victoria*, 218  
 Arauca, *prov.*, 308  
 Archangel, 147  
 Archipelago, *def.*, 21  
 Arctic Circle, 8  
 Arctic Sea, 26, 52, 242  
 Arlennes, *m.*, 84  
 Arequipa, 304  
 Argentine Republic, 310-313, 324  
 Arizona, 273, 276  
 Arkansas, *r.*, 236  
 Arkansas, *state*, 271, 276  
 Armenia, 58, 189  
 Armidale, 208  
 Arno, *r.*, 125  
 Arras, 92  
 Artois, *old prov.*, 91  
 Aruwin, 351  
 Araya race, 47, 62  
 A. Jensen, *is.*, 364  
 Ash, *ti*, 349  
 Asi, *ti*, 57-59. See *Eurasia*  
 As. minor, 58, 188  
 Aspinwall, 300  
 Assam, 166  
 Assiniboia, *prov.*, 251  
 Assiout, 342  
 Assouan, 343  
 Assyria, *old*, 188  
 Astrakhan, 168  
 Asturias, *old prov.*, 96



- Asuncion, 315  
 Atacama desert, 307  
 Atbara, *r.*, 330  
 Athabasca, Lake, 235  
 Athens, 135  
 Athos, Mt., 137  
 Atlantic Ocean, 18, 28  
 Atlas, *m.*, 825, 331  
 Atmosphere, 14, 84-38  
 Auckland, 222  
 Auckland Islands, 221  
 Austerlitz, 120  
 Australia, 22, 191-219  
 Australian Alps, 206, 210  
 Australian Basin, 196  
 Australian Realm, 43  
 Austria-Hungary, 115-123, 193  
 Autocratic monarchy, *def.*, 48  
 Autofagusta, 307  
 Auvergne, 88, 93  
 Avignon, 93  
 Avon, *r.*, 65  
 Ayre-tye, 302  
 Azores, 97  
 Aztec empire, 277  
  
 BAALBEK, 141  
 Bab-el-Mandeb Strait, 53  
 Babylon, 139  
 Bactria, 160  
 Baden, 109, 114  
 Bagamoyo, 346  
 Bagdad, 130  
 Bagirmi, 847  
 Bahamas, *is.*, 289, 324  
 Bahia, 818  
 Bahia Blanca, 312  
 Bahr-el-Ghazal, *r.*, 330  
 Baikal, Lake, 59, 154  
 Baku, 151  
 Balachava, 118  
 Balaton, Lake, 122  
 Balboa, discoverer, 207  
 Balearic Isles, 100  
 Bali, *is.*, 175  
 Balkan, *m.*, 56  
 Balkan peninsula, 180-138  
 Balkash, Lake, 59  
 Balikh, 160  
 Ballarat, 212  
 Baltic Provinces, 140  
 Baltic Sea, 25, 26, 52, 78  
 Baltimore, 265  
 Bamba, 172, 188  
 Baman Pass, 161  
 Banda Islands, 178  
 Banda Oriental, 814  
 Banda Sea, 26, 56  
 Bangalore, 170  
 Bangkok, 178  
 Bank, *def.*, 23  
 Bantu race, 838  
 Baranquilla, 301  
 Barbadoes, *is.*, 200, 321  
 Barbary States, 835  
 Barbervton, 301  
 Barbuda, *is.*, 289  
 Barcelona, 100  
  
 Barka plateau, 338  
 Barman, 110  
 Baroda, 160, 170  
 Basel, 104  
 Basilicata, *prov.*, 128  
 Basqua, *old prov.*, 99  
 Basques, 89, 96  
 Basutoland, 357  
 Batavia, 177  
 Bath, 71  
 Bathurst, 209  
 Baton Rouge, 272  
 Batum, 151  
 Bavaria, 109, 113  
 Bay City, 268  
 Bay of Bight, *def.*, 23  
 Beaconsfield, 218  
 Bechuanaland, 358  
 Bedouins, 139  
 Beechworth, 212  
 Belem, 318  
 Belfast, 71  
 Belfort, 94  
 Belgium, 84-86, 193  
 Belgrade, 133  
 Belize, 283  
 Beluchistan, 159, 193  
 Benares, 168  
 Bendigo, 212  
 Bengal, 168, 169  
 Benin, Bight of, 326  
 Ben Nevis, *m.*, 65  
 Berbice, *r.*, 321  
 Bergamo, 127  
 Bergen, 76  
 Berlin, 111  
 Beyrout, 141  
 Bharno, 171  
 Bhitau, 167  
 Bhafr, Bight of, 326  
 Bienne, Lake of, 102  
 Billao, 99  
 Binué, *r.*, 331  
 Biobio, *r.*, 308  
 Birmingham, 70  
 Bismarck Archipelago, 179  
 Biwa, Lake, 191  
 Black Country, 170  
 Black Earth, 145  
 Black Forest, *m.*, 105  
 Black Hills, 270  
 Black Sea, 25, 26, 53  
 Black Type of Mankind, 46  
 Blanco, Cape, 326  
 Blantyre, Africa, 346  
 Blenheim, 224  
 Bloemfontein, 360  
 Blue Grass Region, 267  
 Blue Mountains, 206  
 Blue Mountains, Jamaica, 288  
 Blue Nile, *r.*, 330  
 Boers, 352  
 Bogota, 301  
 Bohemia, 109, 120  
 Bohemian Forest, *m.*, 105  
 Bokhara, 151  
 Bokkeveld, *m.*, 358  
 Bolan Pass, 159  
  
 Bolivar, the Liberator, 298  
 Bolivia, 305, 306, 321  
 Bologna, 123  
 Bona, 350  
 Bonhuys, *prov.*, 166, 170  
 Bon, Cape, 327  
 Bordeaux, 93  
 Borneo, 56, 177  
 Bornholm, *is.*, 78  
 Bornu, 317  
 Borodino, 149  
 Bosnia, *prov.*, 119  
 Bosphorus, 138  
 Boston, 261  
 Botany Bay, 201  
 Boulogne, 92  
 Bourke, 209  
 Brahmanism, 161  
 Brahmputra, *r.*, 162, 188  
 Branco, Cape, 292  
 Brandenburg, *prov.*, 111  
 Bras d'Or, 214  
 Brazil, 315-319, 324  
 Brazil Plateau, 294, 316  
 Bremen, 109, 111  
 Brenner Pass, 119  
 Breslau, 112  
 Brest, 92  
 Bridgetown, 200  
 Brienz, Lake of, 102  
 Brighton, 71  
 Brighton, Victoria, 212  
 Brindisi, 128  
 Brisbane, 205  
 Bristol, 71  
 Bristol Channel, 65  
 British Columbia, *prov.*, 25  
 British Empire, 68  
 British Guiana, 321, 324  
 British Honduras, 282, 324  
 British Islands, 64-72  
 British North Borneo, 177  
 British West Africa, 365  
 Brittany, *old prov.*, 92  
 Brody, 121  
 Brooklyn, 263  
 Brooklyn Bridge, 239  
 Broges, 86  
 Brunel, 177  
 Brinn, 120  
 Brunswick, 100  
 Brussels, 85  
 Bucharest, 133  
 Buda-Pesth, 122  
 Buddhaism, 45, 184, 188, 191  
 Buenos Ayres, 312  
 Buffalo, 263  
 Bukowina, *prov.*, 118  
 Bulak, 311  
 Bulgaria, 134, 193  
 Burgundy, *old prov.*, 93  
 Burke, explorer, 203  
 Burma, 166, 171  
 Burra-Burra, 214  
 Bushire, 159  
 Bushangers, 207, 218  
 Bussora, 159  
 Butter, 78, 125

- CABES, Gulf of, 327**  
**Cadiz, 100**  
**Cagliari, 190**  
**Cairo, 341**  
**Cairo, Ill., 268**  
**Calabria, prov., 128**  
**Calais, 92**  
**Calcutta, 160**  
**Caldera, 307**  
**California, 274, 2, 3**  
**Callao, 304**  
**Cambodia, 173**  
**Cambrai, 92**  
**Cambridge, 71**  
**Cambridge, Mass., 261**  
**Camels, 140, 111, 214**  
**Cameroon Colony, 340**  
**Campbelltown, Tasmania, 218**  
**Campior, 175**  
**Canada, 243, 253, 324**  
**Canadian Pacific Railway, 251**  
**Cannary Islands, 99, 328**  
**Cannes, 93**  
**Canon, def., 19**  
**Canabuan Range, m., 60, 95**  
**Canterbury, 70**  
**Canterbury, prov., 223**  
**Canton, 186**  
**Cape Coast Castle, 319**  
**Cape Colony, 353, 367**  
**Cape def., 21**  
**Cape Town, 355**  
**Capri, is., 129**  
**Caracas, 323**  
**Cardinal, 263**  
**Cardiff, 70**  
**Caribbean Sea, 26, 285, 292**  
**Caribs, 286, 320**  
**Carinthia, prov., 119**  
**Carishul, 121**  
**Carriola, prov., 118**  
**Caroline Islands, 225**  
**Carpathian, m., 59, 115**  
**Carara, 125**  
**Catagana, 100**  
**Catago, 285**  
**Catluage, 338**  
**Cartier, discoverer, 245**  
**Cascade Mountains, 283**  
**Caspian Sea, 26, 59, 151, 158**  
**Cassiquiare, r., 204**  
**Castile, old prov., 99**  
**Castilian Range, m., 95**  
**Castlomaine, 212**  
**Castor-oil, 160**  
**Catalonia, old prov., 100**  
**Catamarca, prov., 313**  
**Catania, 128**  
**Catoche, Cape, 281**  
**Cattle, 81, 125, 268, 311**  
**Cauca, r., 293**  
**Caucasus, prov., 150**  
**Caucasus, m., 58**  
**Cawnpore, 168**  
**Cayenne, 320**  
**Cedar Keys, 207**  
**Celebes, is., 56, 178**  
**Celebes Sea, 26, 56**  
**Central America, 281-285**  
**Central Provinces, area, 166**  
**Cephalonia, is., 135**  
**Ceran, is., 178**  
**Cerro de Pasco, 304**  
**Cetlinge, 134**  
**Ceuta, 100, 336**  
**Cevennes, m., 88**  
**Ceylon, 171, 172, 193**  
**Chad, Lake, 331**  
**Chagos Archipelago, 170**  
**Chalcidice, 137**  
**Chaldea, old empire, 139**  
**Chalk Ridge, 65**  
**Challenger, cruise of, 26**  
**Chalons, 94**  
**Champagne, old prov., 91**  
**Champlain, Lake, 261**  
**Channel Islands, 65**  
**Charante, dep., 93**  
**Chaileroi, 66**  
**Charlestown, 265**  
**Charlottenburg, 112**  
**Charlottetown, 249**  
**Charters Towers, 205**  
**Charybdis, 128**  
**Chatham Island, 224**  
**Chech language, 121**  
**Chelyuskin, Cape, 52**  
**Chemnitz, 113**  
**Cherbourg, 92**  
**Cherviot Hills, 65**  
**Chicago, 269**  
**Chile, 306-309, 324**  
**Chillon, 308**  
**Chiloe, is., 308**  
**Chimborazo, m., 302**  
**Chinamen, 183, 211, 257**  
**China Proper, 181-186**  
**China Sea, 26, 55, 56**  
**Chinese Empire, 180-188, 193**  
**Chinese language, 181**  
**Chingau, m., 58, 186**  
**Chonos Archipelago, 308**  
**Christchurch, 224**  
**Christiania, 76**  
**Cinchona, 172, 177, 303**  
**Cincinnati, 267**  
**Cinnamon, 272**  
**Ciudad Bolivar, 823**  
**Civilization, def., 45**  
**Cleveland, 287**  
**Climate, zones of, 9**  
**Climates, 88**  
**Coal, 69, 86, 88, 110, 148, 182**  
**189, 208, 263**  
**Coast Range, m., 233**  
**Coasts, 23, 24**  
**Coca, 306**  
**Coelabamba, 306**  
**Cochin, 170**  
**Cochin China, 173**  
**Cochineal, 278**  
**Cocoa, 802, 823**  
**Coco-de-Mer, 364**  
**Coco-nut, 172, 225, 226**  
**Cod, Cape, 281, 261**  
**Codfish, 80, 253**  
**Coffee, 172, 177, 285, 288, 316**  
**Cognac, 93**  
**Colimbra, 98**  
**Cold Wall, 82**  
**Colesberg, 357**  
**Cologne, 110**  
**Colombia, 290-301, 324**  
**Colombo, 172**  
**Colon, 300\***  
**Colorado, r., 273**  
**Colorado, state, 273, 276**  
**Columbia, dist., 205, 276**  
**Columbus, discoverer, 4, 285, 297**  
**Comayagua, 284**  
**Como, Lake of, 124**  
**Compass, 10**  
**Comstock lode, 274**  
**Concepcion, 308**  
**Concord, 261**  
**Confederate States, 257**  
**Configuration, def., 14**  
**Congo, r., 329**  
**Congo Free State, 350, 365**  
**Congo Territory, 340**  
**Congress of United States, 256**  
**Congress of Vienna, 75**  
**Connaught, prov., 72**  
**Connecticut, 262, 276**  
**Constance, 104**  
**Constance, Lake of, 102**  
**Constantine, 338**  
**Constantinople, 138**  
**Continental shelf, def., 22**  
**Continents, 16, 23**  
**Contour line, 12**  
**Cook, Mt., 223**  
**Cook Strait, 219**  
**Cooktown, 205**  
**Coomassie, 319**  
**Cooarang, the, 213**  
**Copenhagen, 79**  
**Coplabs, 307**  
**Copper, 95, 213, 307**  
**Copra, 226**  
**Coptic Church, 380**  
**Cork, 307**  
**Cork, 307**  
**Cork-oak, 96**  
**Corrientes, 318**  
**Corunna, 99**  
**Cosaca, 148**  
**Costa Rica, 285, 824**  
**Cotopaxi, m., 301**  
**Cotton, 164, 226, 260, 266, 840**  
**Council Bluffs, 270**  
**Country, def., 68**  
**Courtrai, 86**  
**Crow, 121**  
**Crete, is., 185**  
**Crima, 148**  
**Croatia, 118**  
**Cuba, is., 287, 324, 3**

- Cuenca, 302  
 Curacao, 290  
 Currents, 135  
*Currents, oceanic*, 31  
 Cuzeo, 305  
 Cyclades, *is.*, 136  
 Cyprus, 136  
 Cyrene, 338  
  
 DAPHNEY, 319  
 Dakar, 348  
 Dakota, 270, 276  
 Dalmatia, *prov.*, 118  
 Damara Land, 351  
 Damascus, 141  
 Damietta, 341  
 Dannemora, 77  
 Danube, *r.*, 106, 115, 133  
 Danzig, 112  
 Dardanelles, 138  
 Dar For, 343  
 Darling, *r.*, 196  
 Darmstadt, 114  
 Dates, 140  
 De Aar, 355  
 Dead Sea, 141  
 Debrecein, 122  
*Definitions of terms*, 21, 22  
*Degree, length of*, 8  
 De Kaap, *dist.*, 361  
 Dekkan, 162  
 Delagoa Bay, 326  
 Delaware, *r.*, 263  
 Delaware, *state*, 264, 276  
 Delft, 83  
 Delgado, Cape, 327  
 Delhi, 168  
 Deloraine, 218  
 Deltas, 24  
 Demerara, *r.*, 321  
 Deniliquin, 209  
 Denmark, 78-80, 193  
 Denver, 273  
*Deserts*, 20  
*Despotism, def.*, 48  
 Detroit, 268  
 Diamantina, 319  
*Diamonds*, 83, 819, 856  
 Diego Garcia, 171  
 Dijon, 93  
 Dinaric Alps, 119  
 Findings, 174  
 Disco Bay, 241  
 Dismal Swamps, 265  
 Dividing Range, *m.*, 210  
 Dnieper, *r.*, 145  
 Dobruzscha, *prov.*, 132  
 Dodo, 364  
 Don, *r.*, 145  
 Dordogne, *r.*, 89  
 Douglas, 72  
 Douro, *r.*, 95  
 Dover, 71  
 Dorefield, *m.*, 74  
 Dragon's Mouth, 828  
 Drainage Areas, 18  
 Draken Berge, *m.*, 323, 354  
 Drammen, 76  
  
 Drave, *r.*, 115  
*Dravidians*, 61, 165  
 Dresden, 113  
 Dublin, 71  
 Dulcigno, 134  
 Duna, *r.*, 145  
 Dundee, 69  
 Dunedin, 224  
 Durban, 359  
 Durham, 70  
 Dusseldorf, 110  
 Dutch East Indies, 175, 193  
 Dutch Guiana, 321, 324  
 Dwina, *r.*, 145  
 Dyaks, 177  
  
 Earth, the, 13, 14, 16  
*Earthquakes*, 97, 190, 219, 293  
 Easter Island, 228  
 Eastern Archipelago, 55, 175-179  
 Eastern Ghats, *m.*, 162  
*Eastern Realm*, 43  
 Eastern Turkestan, 181, 186  
*East India Company*, 164  
 East London, 357  
 East River, 202  
 East St. Louis, 271  
 Ebro, *r.*, 95  
 Echuca, 212  
 Ecuador, 301-303, 324  
 Eddystone rock, 71  
*Edict of Nantes*, 92  
 Edinburgh, 69  
 Eggs, 125  
 Egnont, Mt., 222  
 Egypt, 339-344, 365  
 Eifel, *m.*, 106  
 Eisenach, 113  
 Ekaterinburg, 150  
 Elbe, *r.*, 106  
 Elberfeld, 110  
 Elburz, *m.*, 58  
 Elephanta, *is.*, 170  
 Elsinore, 79  
*Emilian Road*, 128  
 Enna, 200  
*Enclosed Seas*, 25  
 Enderby Land, 367  
 Engadine, the, 102  
 England, 69-71  
 Entre Rios, *prov.*, 313  
 Epervay, 94  
 Ephesus, ruins, 138  
 Epirus, *old prov.*, 136  
*Equatorial currents*, 31  
 Equatorville, 351  
 Equinox, 91  
 Erebus, Mt., 367  
 Erfurt, 113  
 Erie, Lake, 234  
 Errumango, 226  
 Erzerum, 139  
 Escuintla, 283  
*Escurial*, 99  
 Eso, *is.*, 191  
*Esparto grass*, 337  
 Esquimaux, 239, 241  
 Essen, 111  
 Essequeibo, *r.*, 321  
 Ethiopia, 343  
*Ethiopian Realm*, 43  
 Etna, Mt., 128  
*Eucalyptus trees*, 125, 199  
 Euphrates, 139  
*Eurasia, continent of*, 51-193  
 Euripus Strait, 185  
 Europe, 22, 59  
 Everest, Mt., 57, 167  
 Everglades, the, 267  
 Eyre, Lake, 197  
  
 FAHLUN, 77  
 Falkland Islands, 313, 324  
 Falmouth, *Jamaica*, 288  
 Fiske Bay, 355  
*Famines in India*, 163  
 Farewell, Cape, 240  
 Faroe Islands, 73  
 Farsistan, *prov.*, 158  
 Fellahin, 339  
 Fernando Po, *is.*, 326  
 Ferns, 220  
*Ferret's Law*, 31  
 Ferro, *is.*, 7  
*Fetichism, def.*, 45  
 Fez, 336  
 Fezzan, *prov.*, 338  
 Fiji Islands, 226, 229  
 Fingall, 218  
 Finland, 146  
*Finnish*, 15  
 Finsteraarhorn, 101  
 Firenze, 129  
 Finne, 119  
 Fjords, 25  
 Flanders, *old prov.*, 84, 91  
*Flemings*, 84  
 Flinders Range, 197, 213  
 Florence, 129  
 Florida, 267, 276  
 Flowers, 183, 190, 355  
 Flushing, 83  
 Fly River, 179  
 Fonseca, Gulf of, 283  
 Foo-chow, 186  
 Forinby, 218  
 Formosa, 186  
 Fox, *r.*, 269  
 France, 87-94, 193  
*Francis, dictator*, 315  
 Frankfurt-on-the-Main, 111  
*Franklin, explorer*, 242  
 Franz Josef Land, 243  
 Fray Bentos, 314  
 Free Town, 348  
 Fremantle, 216  
 French Guiana, 320, 324  
 French Indo-China, 173, 193  
 French West Africa, 348, 365  
 Friendly Islands, 227  
 Frisian Islands, 80  
 Fundy, Bay of, 249  
*Fur-seal*, 244

- Fusan, 189  
Fusiyama, *m.*, 192
- GALAPAGOS, *Is.*, 302**  
Galata, 138  
Galatia, *old prov.*, 138  
Galatz, 133  
Galena, 208  
Galicia, 118, 121  
Galle, 172  
Gallinas, Cape, 292  
Gallipoli, 138  
Galveston, 272  
Ganges, *r.*, 51, 162  
Garia, Lake, 115, 124  
Garibaldi, *liberator*, 126  
Garoume, *r.*, 88  
Gastein, 119  
Gavchos, 311  
Gaudiana, *r.*, 95  
Gaurisankar, *m.*, 167  
Geelong, 212  
Gelle, 77  
Gellivara, 77  
Geneva, 104  
Geneva, Lake of, 101  
Genoa, 129  
*Geography, Divisions of*, 1-3  
Georgetown, 321  
Georgia, 265, 276  
German Empire, 104-115, 193  
German States, 109  
German West Africa, 249, 351, 365  
Gettysburg, 265  
Ghent, 86  
Giant Mountains, 105  
Gibraltar, 100  
Gilbert Islands, 225  
Gin-seng root, 189  
Gippsland, *dist.*, 212  
*Gipsies*, 98, 117  
Gironde, *estuary*, 88  
Gisch, 342  
Giurgevo, 133  
Glasgow, 69  
Glencig, *r.*, 210  
Glommien, *r.*, 74  
Goa, 170  
Gobi desert, 57, 187  
Godavari, *r.*, 162  
Godhavn, 241  
Godthaab, 241  
Golemda, 170  
Gold, 123, 150, 211, 252, 361  
Gold Coast, 348  
Golden Gate, 232  
Golden Horn, 138  
Gondar, 344  
Good Hope, Cape, 326  
Gotha, 113  
Gothenburg, 77  
Gothland, *Is.*, 74  
Gothland, *prov.*, 76  
Gottingen, 111  
Goulburn, 209  
Graaf Reynet, 357  
Gracias a Dios, Cape, 281
- Graham's Land, 367  
Grahamstown, Cape Col., 357  
Grahamstown, N.Z., 222  
Grain Coast, 348  
Grampians, Victoria, 210  
Granada, Nicaragua, 284  
Granada, Spain, 100  
Gran Chaco, 295, 310  
Grand Cañon, 273  
Gran Sasso, *m.*, 128  
Graz, 119  
Great Australian Bight, 195  
Great Banks of Newfoundland, 253  
Great Barrier Reef, 195  
Great Basin, 233  
Great Bear Lake, 235  
Great Belt, 78  
Great Britain, 64-71  
Great Divide, 234  
Great Dividing Range, *m.*, 190  
Great Glen, 63  
Great Karoo, 355  
Great Lakes, 234  
Great Namaqua Land, 351  
Great Ouse, *r.*, 66  
Great Plains, 234  
Great Plateau, 327  
Great Russia, 149  
Great Slave Lake, 235  
Greecian Archipelago, 130  
Greece, 135, 136, 193  
Greenland, 240, 241  
Greenock, 69  
Grenada, *Is.*, 200  
Grenadines, *Is.*, 200  
Grennab, 338  
Greymouth, 223  
Greytown, 284  
Griqualand West, 355  
Griqua Town, 356  
Guadalajara, 280  
Guadalquivir, 95  
Guadeloupe, 289, 324  
Guadi, *meaning*, 96  
Guanajuato, 279  
Guarani tribe, 314  
Guardafui, Cape, 327  
Guatemala, 283, 324  
Guayaquil, 302  
Quayas, *r.*, 303  
Guevo Upas, 176  
Guiana, 320  
Guiana Plateau, 294  
Guinea, Gulf of, 326  
Gulf, *def.*, 23  
Gulf Stream, 32, 79  
Gutta-percha, 174  
Guyenne, *old prov.*, 63  
Gwalior, 168  
Gympie, 205
- HAARLEM, 83  
Hague, the, 83  
Haiderabad, 166, 170  
Haiti, *Is.*, 287, 288, 324  
Hakodate, 191  
Halifax, 248
- Halle, 112  
Halnand, *r.*, 161  
Hamburg, 109, 111  
Hami, 187  
Hamilton, Ont., 251  
Hamitic race, 47  
Hammerfest, 76  
Hang-chow, 184  
Han-kow, 184  
Hanoi, 174  
Hanover, 111  
Hardanger-fjord, 76  
Hartford, 262  
Harz, *m.*, 59  
Hatteras, Cape, 231  
Hauraki Gulf, 221  
Havana, 287  
Havre, 92  
Hawaii, 228, 229  
Hawaia, Lake, 223  
Hawke Bay, 221  
Hawkesbury, 206  
Hay, 209  
Headland, *def.*, 21  
Heard Island, 368  
Hebrides, 65  
Hecla, *m.*, 80  
Hedjas, *prov.*, 140  
Heldelberg, 114  
Height of Land, the, 234  
Hellenes, 135  
Helsingborg, 77  
Helsingfors, 146  
Hemp, 145, 178, 279  
Hera, 160  
Herauld, *dep.*, 93  
Herculaneum, 129  
Hergott Springs, 215  
Herr-rud, *r.*, 150, 160  
Hermoupolis, 186  
Herzegovina, 119  
Hesse, 109, 114  
Hesse-Nassau, *prov.*, 111  
Highlands of Scotland, 65  
High Plain, *def.*, 22  
High Tauern, *m.*, 119  
Hill, *def.*, 22  
Himalaya, *m.*, 57  
Hindu Kush, *m.*, 58, 161  
Hindus, 63, 165  
Hoang-Ho, *r.*, 182  
Hobart, 218  
Hokitika, 223  
Holland, 80-83, 193  
Holyhead, 72  
Hondo, 191, 301  
Honduras, 283, 324  
Hong-kong, 186  
Honolulu, 228  
Hue Tunnel, 262  
Hue town, 355  
Hue, Cape, 292  
Hot Springs, 271  
Hottentots, 338  
Hovas, 862  
Huallaga, *r.*, 303  
Hudson Bay, 26, 285, 251  
Hudson Bay Company, 245

- Hudson River, 262  
 Hué, 174  
 Huelva, 100  
 Hull, 70  
 Humber estuary, 66  
 Hungary, 118, 122  
 Hunsruck, *m.*, 106  
 Huron, Lake, 284  
*Hurricanes of West Indies*, 286  
 Hydrosphere, 14, 22-34  
 Hyogo, 192  
  
**IBERIAN peninsula**, 91  
*Iberians*, 61  
 Iceland, 79  
 I-chang, 185  
 Idaho, 274, 276  
 Idria, 119  
 Ikopa, *r.*, 363  
 Illawarra, *dist.*, 209  
 Illini, *m.*, 306  
 Illinois, 268, 276  
*Incurse, def.*, 23  
 India, *coasts of*, 54  
 Indiana, 268, 276  
 Indianapolis, 268  
 Indian Empire, 161-171, 193  
 Indian Ocean, 18, 29  
 Indian Territory, 271, 276  
 Indigo, 164, 283  
 Indo-China, *peninsula*, 54  
 Indus, *r.*, 162  
 Inkerman, 148  
*Inland Sea, def.*, 25  
 Inn *r.*, 102, 115  
 Innsbruck, 119  
 Interlaken, 102  
 International Deep, 20  
 Invercargill, 224  
 Inverness, 69  
 Iona, 69  
 Ionia, 138  
 Ionian Islands, 135  
 Iowa, 270, 276  
 Ipswich, *Victoria*, 205  
 Iquique, 307  
 Iran high plain, 58  
 Ireland, 71  
 Irkutsk, 154  
 Iron Mountain, 271  
*Iron-ore*, 95  
 Ischia, *is.*, 129  
 Isippingo, 359  
*Island, def.*, 21  
*Islands, continental def.*, 33  
 Isle of Desolation, 307  
 Isle of France, 364  
 Isle of Man, 72  
 Ismailia, 343  
 Isipahan, 158  
*Isthmus, def.*, 21  
 Italy, 124-130, 193  
*Ivory*, 153, 334  
 Ivory Coast, 348  
  
**JALAPLA Pass**, 167  
 Jamaica, 288, 324  
 James River, 265  
 Jamestown, 365  
 Japan, 189-192, 193  
 Japan Sea, 65  
 Japura, *r.*, 301  
 Jassy, 133  
 Java, 69, 176  
 Java Sea, 26, 56  
 Jaxartes, *r.*, 151  
 Jeddah, 140  
 Jena, 113  
*Jenghis Khan, conqueror*, 160, 181  
 Jerez, 100  
 Jersey City, 263  
 Jerusalem, 141  
*Jews*, 121, 147, 336  
 Jeypore, 169  
 Jhelam, *r.*, 166  
 Jilolo, *is.*, 178  
 Johannesburg, 361  
 Jokjokarta, 177  
 Jordan, *r.*, 141  
 Jotun fjeld, *m.*, 74  
 Juan Fernandez, *is.*, 308  
 Jubbulpore, 170  
 Jujuy, 313  
 Jungaria, 181, 187  
 Jung-frau, *m.*, 101  
 Jura, *m.*, 69, 101  
 Jute, 164  
  
**KADUL**, 161  
 Kalotur Falls, 321  
 Kalahari Desert, 329  
 Kamchatka, 164  
*Kanakas*, 226  
 Kanchew, 187  
 Kandahar, 101  
 Kandy, 172  
 Kanem, 347  
*Kangaroo*, 190  
 Kansas City, 271  
 Kansas, *r.*, 236  
 Kansas state, 271, 276  
 Kapunda, 214  
 Karachi, 169  
 Kara Sea, 62  
 Karlowitz, 122  
 Karlskrona, 77  
 Karlsruhe, 114  
 Karnak, *ruins*, 312  
 Karun River, 158  
 Kaahan, 153  
 Kashgar, 186  
 Kashmir, 166  
 Kattgat, 62  
 Kauai, *is.*, 223  
*Kauri pine*, 220  
 Kazan, 150  
 Kelat, 159  
*Kelts*, 62, 66, 80  
 Ke-lung, 186  
 Kenia, *m.*, 323  
 Kentucky, 267, 276  
 Kermadec Islands, 224  
 Kertch, Strait of, 148  
 Keweenaw Point, 263  
 Key West, 266  
 Kezбек, Mt., 157  
 Khaiber Pass, 161  
 Kharkoff, 148  
 Khartoum, 343  
 Khlva, 151  
 Khojak Anram, *m.*, 161  
 Khorassan, *prov.*, 159  
 Khotan, 186  
 Klakhta, 154  
 Kiandra, 209  
 Kicking Horse Pass, 251  
 Kieff, 148  
 Kiel, 111  
 Kilauca, *crater*, 228  
 Kilimanjaro, *m.*, 328  
 Killarney, *lakes*, 72  
 Kimberley, 355  
*Kimberley, dist.*, 216  
 King George's Sound, 216  
 Kingston, *Jamaica*, 298  
 Kingston, *N.Y.*, 224  
 Kingston Ont., 250  
 Kingstown, 71  
 King William's Town, 357  
 Kirghiz, 151  
 Kishineff, 148  
 Kistna, *r.*, 162  
 Kiusin, *is.*, 192  
 Kjölen, *m.*, 74  
 Kobi, 192  
*Kolarians*, 61, 155  
 Konigratz, 124  
 Konigsberg, 112  
 Kong Mountains, 331  
 Kong-borg, 76  
 Kooninga, 214  
 Kordofan, 313  
 Korea, 189  
 Koriaks, 154  
 Kosciusko, Mt., 196  
 Krakaton, 176  
 Krasnovodsk, 157  
 Krennitz, 123  
 Kronstadt, *Hungary*, 123  
 Kronstadt, *Russia*, 147  
 Kuching, 177  
 Kuen-lun, *m.*, 57  
*Kurds*, 139  
 Kurile Islands, 190  
*Kuro Siwo*, 32  
 Kurrachee, 169  
 Kuruman, 358  
 Kyoto, 192  
  
**LABRADOR**, 253  
*Labrador current*, 32  
 La Brea, 323  
*Laccalives, is.*, 170  
 Lachlan, *r.*, 196  
*Lacquer-tree*, 190  
 Ladrone Islands, 225  
 Ladysmith, 359  
 Lagos, 349  
 La Guayra, 323  
 Lahn, *r.*, 105  
 Lahore, 169  
 Lake of a Thousand Isles, 250  
 Lakes, 20

La Mancha, *prov.*, 90  
 Laadskrona, 77  
 Languages, 47  
 La Paz, 306  
 La Plata, 312  
 La Plata River System, 295  
 Lapps, 75, 147  
 Laputa gorge, 328  
 Larissa, 135  
 Larnaca, 196  
 Lassa, 188  
 Latitude, 5, 6  
 Laureston, 218  
 Laurens, *m.*, 235  
 Lausanne, 104  
 Leadville, 273  
 Lebanon, *m.*, 111  
 Leeds, 70  
 Leeward Islands, 285, 286  
 324  
 Leibern, 129  
 Leh, 166  
 Leichtenstein, 104  
 Leinster, *prov.*, 71  
 Leipzig, 113  
 Lemberg, 121  
 Leon, *c.*, 154  
 Leon, *Mexico*, 280  
 Leon, *Neurymia*, 284  
 Leon, *old prov.*, 99  
 Leopoldville, 351  
 Lesser Antilles, 289  
 Levnik, 277  
 Lexington, 261  
 Leyden, 53  
 Liechtenstein, 104  
 Lieke, 86  
 Lieke, 86  
 Lignaria, *prov.*, 129  
 Lille, 92  
 Lima, 304  
 Limoges, 93  
 Limon, 285  
 Limpopo, *r.*, 328  
 Linz, 129  
 Lipari, *is.*, 129  
 Lippe, 109  
 Lisbon, 97  
 Lithgow, 209  
 Lithosphere, 14  
 Lithuania, *old prov.*, 147  
 Little Belt, 78  
 Little Rock, 271  
 Little Russia, 148  
 Liverpool, 69  
 Liverpool Plains, 206  
 Liverpool Range, *m.*, 206  
 Livingstone Falls, 330  
 Livingstone, *missionary*, 334  
 Livingstonia, 347  
 Livorno, 129  
 Llano Estacado, 272  
 Llano, 40, 204, 322  
 Loando, 351  
 Lob-nor, *lake*, 187  
 Lockwood, *explorer*, 242  
 Loddon, *r.*, 210

Lodz, 147  
 Loess, 113, 182  
 Lofoten Islands, 74  
 Loire, *r.*, 88  
 Lokinga Mountains, 329  
 Loknja, 348  
 Lombardy, *prov.*, 127  
 Lombok, *is.*, 175  
 Lomond, Loch, 69  
 London, 71  
 London, *Ont.*, 251  
 Long Island, 262  
 Longitude, 6  
 Long White Mountains, 186  
 Loos-Choo, *is.*, 189  
 Lord Howe Island, 210  
 Lorenzo Marquez, 361  
 Los Angeles, 275  
 Louisiana, *old prov.*, 256  
 Louisiana, *state*, 271, 276  
 Louisville, 267  
 Louvain, 86  
 Low Archipelago, 227  
 Lowell, 261  
 Lower Austria, *prov.*, 118  
 Lower California, *prov.*, 277  
 Low Plain, *def.*, 21  
 Loyalty Islands, 226  
 Lubek, 109, 111  
 Lucerne, Lake of, 102  
 Lucknow, 168  
 Lumber, 247  
 Lund, 77  
 Lut, *desert*, 159  
 Luxemburg, 83  
 Luxor, *ruins*, 342  
 Luzon, *is.*, 178  
 Lyons, 93  
 Lytleton, 224  
 MAAS. See *Meuse*  
 Maastricht, 83  
 Macao, 186  
 Macassar, 178  
 Macdonald Island, 368  
 Macdonnell Ranges, 215  
 Macedonia, *old prov.*, 187  
 Mackenzie, *r.*, 235  
 Macleay, *navigator*, 213  
 Macon, 93  
 Macquarie Harbour, 217  
 Madagascar, 327, 362, 365  
 Madeira, *is.*, 97  
 Madeira, *r.*, 295  
 Madison, 269  
 Madras, 169, 170  
 Madrid, 99  
 Madura, *is.*, 177  
 Magdalen, 74  
 Magdala, 344  
 Magdalena, *r.*, 293  
 Magdeburg, 112  
 Magellan, *discoverer*, 297  
 Maggiore, Lake, 102  
 Magyars, 63, 117  
 Mahanadi, *r.*, 162  
 Mahogany, 282  
 Malabar, 165

Maimachin, 187  
 Main, *r.*, 105  
 Maine, *state*, 261, 276  
 Mainz, 111  
 Maitland, 208  
 Majuba Hill, 359  
 Malacca, 174  
 Malaga, 100  
 Malak, *lake*, 74  
 Malaya Polynesian race, 46  
 Malay States, 174  
 Maldives, *is.*, 170  
 Malles, *rub.*, 199  
 Malmo, 77  
 Malta, 130  
 Mammoth, 153  
 Man, 41-50  
 Manar, Gulf of, 171  
 Managua, 284  
 Manchester, 70  
 Manchester, N.H., 261  
 Manchuria, 181, 186  
 Mandalay, 171  
 Mangassar, 178  
 Manila, 178  
 Manipuri, Lake, 223  
 Manitoba, *prov.*, 251  
 Mannheim, 114  
 Maories, 220  
 Maps, 10-12  
 Maracaybo, 323  
 Maranhao, 318  
 Maranon, *r.*, 294  
 Marco Polo, *traveller*, 181  
 Maritza, *r.*, 130  
 Marlborough, *prov.*, 223  
 Morocco, 336, 365  
 Moryon, *r.*, 321  
 Moryon, *r.*, 321  
 Moryon, *r.*, 321  
 Marsala, 128  
 Marseilles, 93  
 Marshall Islands, 225  
 Martinique, 290  
 Maryborough, 205  
 Maryland, 264, 276  
 Masai-land, 315  
 Mascarenes, *is.*, 364  
 Mascari, 110  
 Massachusetts, 261, 276  
 Massawa, 344  
 Matabel Land, 358  
 Matterhorn, *m.*, 101  
 Matto Grosso, *prov.*, 318  
 Maui, *is.*, 228  
 Mauna Kea, *m.*, 228  
 Mauna Loa, *m.*, 228  
 Mauritius, *is.*, 364, 365  
 Mead, 269, 314  
 Mecca, 110  
 Mecklenburg-Schwerin, 169  
 Mecklenburg-Strelitz, 169  
 Medina, 140  
 Mediterranean Sea, 25, 26, 53  
 Meissen, 113  
 Mekong, *r.*, 172  
 Melanesia, 225-227  
 Melbourne, 211  
 Memel, *r.*, 106

- Memphis, 267  
 Memphis, ruins, 342  
 Menan, r., 172  
 Mendocino, Cape, 232  
 Mendoza, 312  
 Mentoue, 93  
*Mercator's Projection*, 11  
 Mercede, 275  
 Merida, 280  
*Meridian*, 6  
 Merrimac, r., 261  
 Mersey, r., 69  
 Merv, 152  
*Mesa*, 273  
 Meshel, 159  
 Mesopotamia, 139  
 Messina, 128  
*Mestizos*, 278  
 Metz, 115  
 Meuse, r., 84  
 Mexico, 277-280, 324  
 Mexico, city, 279  
 Mexico, Gulf of, 26, 231  
 Meanderan, prov., 158  
 Michigan, Lake, 234  
 Michigan, state, 268, 270  
 Mikronesia, 225  
 Milan, 127  
*Millet*, 163  
 Milwaukee, 269  
 Minas Geraes, prov., 319  
 Mindanao, is., 178  
 Minneapolis, 270  
 Minnesota, state, 270, 274  
 Missions, prov., 313  
 Mississippi Basin, 236  
 Mississippi delta, 232, 272  
 Mississippi, state, 267, 276  
 Missouri, r., 236  
 Missouri, state, 271, 276  
*Mistral*, 125  
 Mobile, 267  
 Mocha, 110  
 Modena, 128  
*Mohammadians*, 137  
 Mojango, 363  
 Moldavia, prov., 152  
 Mollendo, 304  
 Molveno, 357  
 Moluccas, 56, 178  
 Mona Channel, 287  
 Monaco, 91  
 Mongolia, 181, 187  
 Mongols, 46, 61, 187  
*Monothetism*, def., 45  
*Monroe Doctrine*, 277  
 Monrovia, 348  
 Mons, 86  
*Monsoons*, 36, 163, 197  
 Montana, 274, 276  
*Montanus*, 303  
 Monte Carlo, 94  
 Montenegro, 183  
 Monte Rosa, 101  
 Monte Video, 814  
 Montgomery, 267  
 Montpellier, 93  
 Montreal, 250  
 Montserrat, is., 289  
*Monts*, 63, 96  
*Moquis*, 273  
 Morava, r., 131  
 Moravia, 118  
 Morra, 180  
*Mormons*, 274  
 Moscow, 149  
 Moselle, r., 105  
 Mosquito Coast, 284  
 Moulmein, 171  
*Mountain*, def., 22  
 Mount Bischoff, 218  
 Mount Lofly Range, 197, 213  
 Mount Victoria, 269  
 Mourzonk, 338  
 Mozambique, 346  
 Mozambique Channel, 327  
 Mudge, 209  
 Muhlhausen, 114  
*Mujika*, 149  
 Mukden, 186  
*Mulattoes*, 278  
*Mulga scrub*, 199  
 Munich, 113  
 Munster, prov., 71  
 Murchison Falls, 346  
 Murcin, 100  
 Murray, r., 196, 213  
 Murray Bridge, 214  
 Murrumbidgee, r., 190  
 Mysore, 166  
 NAGASAKI, 192  
 Nagpore, 170  
 Namur, 89  
 Nanaimo, 252  
 Nankin, 184  
*Nansen, explorer*, 240  
 Nantes, 92  
 Napier, 222  
 Naples, 129  
 Napo, r., 301, 303  
*Napoleon the Great*, 90, 126, 340  
 Narbada, r., 162  
 Nashville, 267  
 Nassau, 289  
 Natal, 358, 359  
 Natchez, 267  
 Nebraska, 271, 276  
 Neckar, r., 105  
 Negropont, is., 135  
*Negro Race*, 333  
 Nelson, 223  
 Nelson, r., 235  
 Nepal, 167  
 Netherlands, the, 80-83  
 Neuchatel, 104  
 Neuchatel, Lake of, 102  
 Nevada, 274, 276  
 Nevis, is., 289  
 New Alnnden, 275  
 New Amsterdam, 321  
 New Brunswick, prov., 219  
 New Caledonia, is., 226, 229  
 Newcastle, 70  
 Newcastle, Natal, 350  
 Newcastle, N.S.W., 208  
 New England Range, 206  
 New England States, 260  
 Newfoundland, 253, 254, 324  
 New Guatemala, 283  
 New Guinea, 55, 179  
 New Hampshire, 261, 276  
 New Haven, 262  
 New Hebrides, 225  
 New Jersey, 253, 276  
 New Mexico, 273, 276  
*New Northern Realm*, 42  
 New Orleans, 272  
 New Plymouth, 222  
 Newport, 262  
 New Providence, is., 289  
 New Russia, 118  
 New South Wales, 206-210, 229  
 New Westminster, 259  
*New World*, 16  
 New York, city, 262  
 New York, state, 262, 276  
 New Zealand, 219-224, 229  
 Niagara Falls, 234  
 Nicaragua, 281-324  
 Nicaragua, Lake, 284  
 Nice, 93  
*Nickel*, 226  
 Nicolayevsk, 154  
 Nicoya, Gulf of, 265  
 Nieuwveld-Berg, m., 374  
 Niger, r., 331  
*Niger Company*, 347  
 Nilgata, 71  
 Nijni Novgorod, 150  
 Nile, r., 330  
 Nilgiri Hills, 170  
 Nimcs, 93  
 Nineveh, 139  
 Ning-po, 185  
 Nisch, 133  
 Nishapur, 159  
*Nordenskjöld, explorer*, 52  
 Norfolk Island, 210  
 Normandy, old prov., 90  
 Norrköping, 77  
*Norland, prov.*, 76  
 North America, 22, 230-239  
 North Cape, 52  
 North Carolina, 265, 276  
 North Sea, 26, 52  
*North-West Passage*, 212  
 N.W. Provinces and Oudh, 166  
 Norway, 75, 76, 193  
 Norwegian Sea, 26  
 Noumea, 226  
 Nova Scotia, prov., 248  
 Nuremberg, 114  
 Nyassa, Lake, 329  
 Oahu, is., 228  
 Oakland, 275  
 Oamaru, 224  
 Oban, 69  
 Ohi, r., 153  
 Odense, 79

- Oder, r., 106  
 Odessa, 148  
 Ofen, 122  
 Ohio, r., 204, 267  
 Ohio, state, 267, 276  
 Oil City, 264  
 Oil rivers, 349  
 Okhotsk Sea, 55  
 Olendi, is., 74  
 Old Calabar, 369  
 Oldenburg, 109  
 Old Guatemala, 283  
 Old Northern Realm, 42  
 Old World, 16  
 Olufant Berge, m., 353  
 Olympus, Mt., 130  
 Omaha, 271  
 Oman, 110  
 Onehun, r., 222  
 Ontario, Lake, 231  
 Ontario, prov., 240  
 Oonkip, 306  
 Oolitic Ridge, 65  
 Optima, 161, 169, 185  
 Oporto, 98  
 Oran, 337  
 Orange Free State, 360  
 Orange River, 328  
 Oregon, 275, 276  
 Ore Mountains, 105  
 Orenburg, 150  
 Organ Mountains, 319  
 Orinoco, r., 294  
 Orizaba, m., 279  
 Orkneys, is., 65  
 Orleans, 92  
 Oroya, 304  
 Orsova, 123  
 Orura, 306  
 Osaka, 192  
 Ostende, 66  
 Ostriches, 354  
 Otago, prov., 223  
 Ottawa, 250  
 Ottoman Empire, 136-111  
 Oudtshoorn, 356  
 Ouro Preto, 319  
 Ouse, r., 66  
 Out-reef, def., 23  
 Oviedo, 99  
 Owen, 161, 354  
 Oxford, 71  
 Oxus, r., 151  
 Oyapok, r., 320  
 PACIFIC ISLANDS, 224-229  
 Pacific Ocean, 18, 27  
 Padang, 175  
 Pahang, 174  
 Palawan, is., 178  
 Palembang, 175  
 Palermo, 128  
 Palestine, 141  
 Palma, 100  
 Palmas, Cape, 326  
 Palmerston, 215  
 Palm oil, 349  
 Pamir, 56, 161  
 Pampas, 205, 311  
 Pampiro, 311  
 Panama, 300  
 Panga-Panga, 227  
 Papete, 227  
 Papua, 179  
 Para, 318  
 Paraguay, 314-315, 324  
 Paraguay, r., 295  
 Parallels of latitude, 6  
 Paramaribo, 321  
 Paramatta, 208  
 Parana, r., 295  
 Paria, Gulf of, 323  
 Paris, 91  
 Parma, 124  
 Parmassus, Mt., 130  
 Paros, is., 135  
 Parves, 165  
 Patagonia, prov., 310, 313  
 Path, r., 160  
 Pat, r., 169  
 Patras, 135  
 Paysandu, 314  
 Peking, 181  
 Pelew Islands, 225  
 Pelotas, 319  
 Pemba, is., 327  
 Penang, 174  
 Peninsula, def., 21  
 Peninsular War, 97  
 Pennine chain, 65  
 Pennsylvania, 263, 270  
 Pera, 138  
 Peradenia, 172  
 Perak, 174  
 Pergamos, ruins, 138  
 Peru, 150  
 Pernaibuco, 318  
 Persepolis, 158  
 Persia, 156-159, 193  
 Persian Gulf, 26, 53  
 Perth, W. Aust., 216  
 Peru, 303-305, 324  
 Peshawar, 169  
 Pesth, 122  
 Petchora, r., 145  
 Petra, 140  
 Petrolia, 151, 263  
 Petrolia, 251  
 Philadelphia, 263  
 Philippine Islands, 56, 178, 193  
 Phillipopolis, 134  
 Physical Geography, 13-38  
 Picardy, old prov., 91  
 Pictou, 234  
 Piedmont, prov., 128  
 Pieternarifzburg, 359  
 Pilcomayo, r., 295  
 Pillau, 112  
 Pilot Knob, m., 271  
 Pilsen, 121  
 Pinus, m., 130  
 Pisk marshes, 147  
 Pireus, 135  
 Pisa, 129  
 Pitcairn Island, 228  
 Pitch Lake, 323  
 Pit-Hole City, 264  
 Pittsburg, 264  
 Placerville, 275  
 Plants, distribution of, 39-41  
 Plateau, def., 22  
 Platte, r., 236  
 Plenty, Bay of, 221  
 Plevna, 134  
 Plymouth, 71  
 Plymouth, Mass., 261  
 Puom-penhi, 173  
 Po, r., 124  
 Point Parina, 293  
 Pola, 119  
 Poland, 117  
 Polar Currents, 32  
 Polar expeditions, 242  
 Polarity of Earth, 1  
 Polynesia, 227-229  
 Polytheism, def., 45  
 Pomerania, prov., 111  
 Pompeii, 129  
 Pondicherry, 170  
 Ponies, 80  
 Poona, 170  
 Popocatepetl, m., 279  
 Port Adelaide, 214  
 Portage, 269  
 Port Alfred, 357  
 Port Augusta, 214  
 Port-au-Prince, 288  
 Port Chalmers, 221  
 Port Elizabeth, 356  
 Port Jackson, 208  
 Portland, Maine, 261  
 Port Louis, 364  
 Port Moresby, 179  
 Port Natal, 359  
 Port Nelson, 251  
 Port Nolloth, 356  
 Porto Alegre, 319  
 Port of Spain, 323  
 Port Pine, 214  
 Port Royal, 288  
 Port Said, 313  
 Portsmouth, 71  
 Port Stanley, 313  
 Portugal, 97-98, 193  
 Portuguese East Africa, 346, 365  
 Portuguese West Africa, 351, 365  
 Posen, 112  
 Potchefstroom, 361  
 Poti, 151  
 Potomac, r., 265  
 Potosi, 306  
 Postal, 112  
 Prague, 121  
 Prater, 39, 234  
 Pressburg, 122  
 Pretoria, 361  
 Prince Edward Island, prov., 249  
 Protection in trade, 259  
 Providence, 262  
 Province Wellesley, 174



- Prussia, 109-113  
 Pueblo, 279  
 Pueblos, 273  
 Puerto Cabello, 323  
 Puerto Rico, 287, 321  
 Puna, 305  
 Punas, 303  
 Punjab, 166  
 Punta Arenas, 308  
 Puntarenas, 285  
 Puszbas, 122  
 Putumayo, r., 301  
 Pyrenees, m., 60, 95  
 Pyrenees, m., *Victoria*, 210  
  
 QUEBEC, 249  
 Queensland, 203-205, 229  
 Queenstown, 71  
 Queenstown, N.Z., 221  
 Queretaro, 279  
 Quetta, 159  
 Quilmanac, 346  
 Quito, 302  
  
 RABBA, 318  
 Rabbits, 207, 220  
 Ragusa, 119  
 Rainfall, 36  
 Rainy River, 247  
 Rajputana States, 160  
 Rangoon, 171  
 Rann of Katch, 169  
 Radisson, 114  
 Reading, Penn., 263  
 Recife, 318  
 Red Indians, 238  
 Red Sea, 25, 26, 53, 341  
 Regensburg, 114  
 Regina, 251  
 Reims, 94  
 Religions of mankind, 45  
 Republic, def., 48  
 Resht, 158  
 Réunion, 364  
 Reuss-Greiz, 109  
 Reuss-Schleiz, 109  
 Reval, 146  
 Reykjavik, 80  
 Rhacian Alps, 102  
 Rhine, r., 102, 105  
 Rhineland, *prov.*, 110  
 Rhode Island, 262, 276  
 Rhodope, m., 134  
 Rhone, r., 88, 101  
 Rier, 125, 161, 190  
 Richmond, 265  
 Riga, 146  
 Rigi, m., 103  
 Rimouski, 249  
 Rio Colorado, r., 295  
 Rio de Janeiro, 319  
 Rio Grande del Norte, r., 236  
 Rio Grande do Sul, *prov.*, 319  
 Rioja, 313  
 Rio Negro, r., 295  
 Rivers, 19  
 Riversdale, 356  
 Roaring Forties, 35  
 Rockhampton, 205  
 Rocky Mountains, 233  
 Roggerveld Berge, m., 354  
 Romantic peoples, 62, 90, 126  
 Rome, 129  
 Roraima, m., 321  
 Rosario, 312  
 Roses, 134  
 Rosetta, 341  
 Ross, discoverer, 366  
 Rotorua, Lake, 221  
 Rotterdam, 83  
 Roubaix, 92  
 Rouen, 92  
 Ruapehu, m., 221  
 Ruhr, r., 106  
 Rumania, 132, 193  
 Rumelia, Eastern, *prov.*, 134  
 Russian Empire, 142-155, 192  
 Rustchuk, 134  
  
 SABLE, Cape, 231  
 Sallowa, 121  
 Saghalien, is., 155  
 Saginaw, 268  
 Sago, 174  
 Sahara desert, 331  
 Saigon, 174  
 St. Andrews, 69  
 St. Ann's, 288  
 St. Augustine, 267  
 St. Elias, Mt., 233  
 St. Etienne, 93  
 St. Gall, 104  
 St. Gothard, 101, 127  
 St. Helena, is., 364  
 St. John, N.B., 249  
 St. John's, 254  
 St. Kilda, *Victoria*, 212  
 St. Kitts, is., 289  
 St. Lawrence Basin, 234  
 St. Louis, 271  
 St. Louis, *Senegal*, 318  
 St. Lucas, Cape, 232  
 St. Lucia, is., 290  
 St. Mary, Cape, 362  
 St. Paul, 270  
 St. Paul de Loando, 351  
 St. Petersburg, 146  
 St. Thomas, is., 289  
 St. Vincent, is., 290  
 Sajan, m., 58  
 Salado, r., 295  
 Salamanca, 99  
 Salem, 261  
 Salina, 251  
 Salmon, 252  
 Salonika, 137  
 Salt, 121, 163  
 Salta, *prov.*, 313  
 Salt Lake City, 274  
 Salvador, 283, 321  
 Salzburg, 118, 199  
 Samara, 150  
 Samarang, 177  
 Samarcand, 152  
 Sambre, r., 84  
 Samoa, 227  
 Samoyeds, 147  
 San Antonio, Cape, 287  
 San Blas, 279  
 Sanderbans, 169  
 Sandhurst, 212  
 San Domingo, 288, 324  
 Sandwich Islands, 228  
 San Felipe, 308  
 San Francisco, 275  
 San Jacinto, 272  
 San José, *Costa Rica*, 285  
 San José, *Guatemala*, 283  
 San Juan, r., 284  
 San Luis, 312  
 San Marino, 127  
 Sanpo, r., 188  
 San Salvador, 283  
 Santa Fé, *prov.*, 312  
 Santander, 99  
 Santiago, *Chile*, 303  
 Santiago, *Cuba*, 287  
 Santiago del Estero, 313  
 Santorin, is., 136  
 Santos, 319  
 Sao Francisco, r., 291  
 Saone, r., 88  
 Sao Paulo, 319  
 Sapor, 191  
 Saracens, 63  
 Sarakhs, 159  
 Sarawak, 177  
 Sarlinia, 130  
 Saskatchewan, r., 235  
 Satpuri Hills, 162  
 Sault St. Mary, 268  
 Savanilla, 301  
 Savannah, 266  
 Savannah-la-Mar, 288  
 Savara, 319  
 Save, r., 116  
 Saxe-Altenburg, 109  
 Saxe-Coburg and Gotha, 109,  
 113  
 Saxe-Meiningen, 109  
 Saxe-Weimar, 109, 113  
 Saxony, 109, 113  
 Scandinavian peninsula, 73-77  
 Scarborough, 70  
 Schaumburg-Lippe, 109  
 Scheldt, r., 84  
 Schemnitz, 123  
 Schiedam, 83  
 Schleswig-Holstein, 78, 111  
 Schuykill, r., 263  
 Schwarz-Rudolstadt, 109  
 Schwarz-Ronderhausen, 109  
 Scilly Islands, 65  
 Scotland, 68  
 Scutari, 138  
 Sea-level, 29  
 Sea Range, m., 310  
 Seas, 25, 26  
 Seasons, 9  
 Sebastopol, 148  
 Seifar, 94  
 Segoe, 348  
 Seine, r., 88  
 Selistan swamp, 161

- Selvas*, 294, 316  
*Semitic Race*, 47  
*Senegal*, 343  
*Seoul*, 189  
*Serajevo*, 120  
*Serena*, 307  
*Serpent's Mouth*, 323  
*Seyern*, r., 65  
*Servia*, 133, 193  
*Serviceton*, 218  
*Seville*, 100  
*Seychelles Archipelago*, 364  
*Shaffhausen*, 102  
*Shamo desert*, 187  
*Shanghai*, 185  
*Shannon*, r., 66  
*Shan tribes*, 171  
*Shark's Bay*, 216  
*Shat-el-Arab*, 139  
*Sheep*, 98, 188, 207, 311  
*Sheffield*, 70  
*Shetland*, r., 65  
*Shites*, 424  
*Shumane*, r., 191  
*Shiraz*, 158  
*Shire*, r., 329  
*Shool*, def., 23  
*Shotland*, 222  
*Shoshong*, 353  
*Shotts Plateau*, 337  
*Siam*, 172-173, 193  
*Siam-tan*, 185  
*Siberia*, 152-155  
*Sibi Valley*, 161  
*Sicily*, 128  
*Siha*, Gulf of, 327  
*Sierra Acau*, m., 294  
*Sierra Guandama*, m., 99  
*Sierra Leone*, 348  
*Sierra Madre*, m., 233  
*Sierra Maestra*, m., 287  
*Sierra Morena*, 95  
*Sierra Nevada (America)*, m., 213  
*Sierra Nevada de Santa Marta*, m., 300  
*Sierra Nevada (Spain)*, m., 95  
*Sierra Parime*, m., 294  
*Sikoku*, is., 189  
*Silesia*, prov., 112, 118  
*Silk*, 93, 125, 183, 190  
*Silver*, 106, 207, 274, 278  
*Silverton*, 207  
*Simla*, 167  
*Simon's Town*, 355  
*Simons*, 339  
*Sinai*, m., 141  
*Si-ngan-fu*, 184  
*Singapore*, 174  
*Singhalese*, 171  
*Sinope*, 138  
*Sivaco*, 125  
*Sitka*, 244  
*Skaw or Skagen*, 79  
*Slave Coast*, 348  
*Slavery*, 157, 317, 333  
*Slavonia*, 118  
*Slava*, 32, 146  
*Smyrna*, 133  
*Sneeuw Berge*, m., 354  
*Society Islands*, 227  
*Socotra*, is., 327  
*Sogne-fjord*, 74  
*Sokoto*, 347  
*Solomon Islands*, 225  
*Somali Peninsula*, 327  
*Sound*, the, 78  
*Soundings*, 23  
*South African Republic*, 360-362, 365  
*South America*, 291-323  
*South American Realm*, 43  
*Southampton*, 71  
*South Australia*, 213-215, 220  
*South Carolina*, 265, 276  
*Southern Alps of New Zealand*, 223  
*Southern Ocean*, 27  
*South Shetlands*, is., 367  
*Spain*, 98-100, 193  
*Spanish Town*, 288  
*Spartel*, Cape, 325  
*Spey*, r., 65  
*Spezia*, 129  
*Spice Islands*, 178  
*Spitzberg*, 193  
*Spitzbergen*, is., 243  
*Sporades*, is., 138  
*Sprungar*, 167  
*Staffa*, 69  
*Stambul*, 138  
*Stanley*, explorer, 334  
*Stanley Falls*, 329  
*Stanley Pool*, 330  
*Stanovoi*, m., 54  
*Stanhope*, 205  
*Stavanger*, 70  
*Stawell*, 213  
*Stellenbosch*, 355  
*Steppers*, 40, 145  
*Stettin*, 111  
*Stevenson Road*, 347  
*Steyr*, 120  
*Stockholm*, 77  
*Storm Berge*, m., 354  
*Storms*, 36  
*Strait Settlements*, 171, 193  
*Strasburg*, 111  
*Stratford-on-Avon*, 70  
*Stromboli*, 129  
*Sturgeons*, 150  
*Stuttgart*, 114  
*Styria*, prov., 118  
*Snakin*, 343  
*Suere*, 306  
*Sudan*, 843  
*Sudetic Range*, m., 105  
*Suez*, 343  
*Sugar*, 89, 107, 177, 204, 287, 321, 364  
*Sulciman*, m., 58  
*Sulphur*, 125  
*Sulu*, is., 173  
*Sulu Sea*, 26  
*Sunatra*, is., 56, 175  
*Sunderland*, 70  
*Sungari*, r., 186  
*Sunk Plain*, def., 31  
*Sunnates*, 137  
*Superior Lake*, 234  
*Surabaya*, 177  
*Surakarta*, 177  
*Suat*, 170  
*Suimah*, 321  
*Sutro Wundt*, 274  
*Suva*, 227  
*Svaland*, prov., 70  
*Sweden*, 76, 77, 193  
*Swine*, 133, 267, 270  
*Swinemunde*, 111  
*Switzerland*, 101-104, 193  
*Sydney*, N.S., 248  
*Sydney*, N.S.W., 208  
*Syene*, 342  
*Syra*, is., 136  
*Syracuse*, 128  
*Syria*, 141  
*Szegeden*, 122  
*Table-land*, def., 22  
*Table Mountain*, 355  
*Tabriz*, 158  
*Tadilat*, 336  
*Taganrog*, 148  
*Tagus*, 95  
*Tahiti*, is., 227, 229  
*Takashima*, is., 192  
*Talca*, 308  
*Tamar*, r., 217  
*Tamatave*, 363  
*Tamworth*, 208  
*Tamanarivo*, 363  
*Tanganika Lake*, 329, 316  
*Tangier*, 336  
*Tapajos*, r., 295  
*Tapioca*, 318  
*Taprobane*, 171  
*Tapti*, r., 162  
*Tarifa*, Cape, 100  
*Tarim*, r., 58, 187  
*Tashkend*, 152  
*Tasmania*, 217-218, 229  
*Tatra*, m., 122  
*Taurus*, m., 106  
*Tauquo Lake*, 221  
*Ten*, 169, 172, 183, 190  
*Trek*, 171  
*Te Anau Lake*, 223  
*Tegucigalpa*, 284  
*Teheran*, 158  
*Tehuriches*, 313  
*Telegraph in Australia*, 202  
*Tel-el-Kebir*, 341  
*Teneriffe*, 99  
*Tennessee*, r., 236  
*Tennessee*, state, 267, 276  
*Interfield*, 208  
*Teplitz*, 121  
*Tequendama Falls*, 301  
*Tera*, the, 167  
*Terapaca*, prov., 303  
*Terawera Lake*, 221  
*Terror*, Mt., 367  
*Teutons*, 62, 67, 75, 107

- Texas, 272, 276  
 Thames, *r.*, 68  
 Tharr desert, 109  
 Thebes, *ruins*, 342  
 Theiss, *r.*, 115  
 Thessalonica, 137  
 Thessaly, *prov.*, 135  
 Thorshavn, 79  
 Thrace, *old prov.*, 138  
 Thronjhem, 76  
 Thun, Lake of, 102  
 Thuringian Forest, *m.*, 106  
 Tian-shan, *m.*, 58  
 Tiber, *r.*, 125  
 Tibesti Range, *m.*, 331  
 Tibet, 57, 181, 188  
 Ticino, *r.*, 102  
 Tides, 33  
 Tientsin, 181  
 Tierra del Fuego, 292  
 Tiflis, 151  
 Tigris, *r.*, 139  
 Timaru, 241  
 Timbuctoo, 336, 348  
 Time, 6  
*Time standards in America*, 248  
 Timor, 178  
 Timsch, Lake, 313  
 Tin, 174, 204, 217, 270  
 Tirnova, 134  
 Tiflicca, high plain and lake, 293, 305  
 Tiumen, 154  
*Tobacco*, 84, 107, 116, 178, 287  
 Tobago, 323  
 Tobolsk, 154  
 Tocantins, *r.*, 295  
 Togo-laki, 319  
 Tokay, 122  
 Tokyo, 191  
 Toledo, Ohio, 267  
 Toledo Range, *m.*, 95  
 Toledo, Spain, 99  
 Tomsk, 154  
 Tonga Islands, 227  
 Tongariro, *m.*, 221  
 Tonkin, 173  
 Toowumba, 205  
 Torino, 128  
*Tornadoes*, 237  
 Toronto, 250  
 Torrens, Lake, 213  
 Toulon, 93  
 Toulouse, 93  
 Tournay, 86  
 Tours, 92  
*Towns*, 48  
 Townsend, Mt., 196  
 Townsville, 205  
*Trade winds*, 85  
 Trafalgar, Cape, 100  
 Transal, 360  
 Transylvania, 122  
 Transylvanian Alps, 130  
*Treaty of Berlin*, 132  
 Trebizond, 139  
 Trent, 119  
 Trent, *r.*, 66  
 Trieste, 119  
 Trincomali, 172  
 Trinidad, *is.*, 323, 324  
 Tripoli, 338, 339, 365  
 Tristan D'Acunha, *is.*, *Tropics*, 8  
 Troy, N.Y., 263  
 Troy, *ruins*, 138  
 Truxillo, 284  
 Tsaitisin, 150  
*Tsetse-fly*, 332, 346, 361  
 Tsi-Kiang, *r.*, 182  
 Tubingen, 114  
 Tucuman, *prov.*, 813  
 Tugela, *r.*, 359  
 Tula, 149  
*Tundras*, 40, 152  
 Tunis, 338, 365  
 Turin, 128  
 Turkestan, 152  
 Turkey, 136-141, 193  
*Turkumans*, 151  
 Turks, 63, 131, 137  
 Tuscany, *prov.*, 129  
 Tuscarora Deep, 28  
*Types of Mankind*, 16  
 Typhoons, 183  
 Tyrol, 118  
 Tyrrhenian Sea, 53  
 UGANDA, 345  
 Ujiji, 346  
 Ulster, *prov.*, 71  
 United Kingdom, 61-72, 193  
 United States, 255-276, 324  
 Upernivik, 211  
 Upper Austria, 118  
 Upsala, 77  
 Urak, *m.*, 59  
 Urga, 187  
 Uruguky, 312-314, 324  
 Uruguay, *r.*, 295  
 Urumsa, 187  
 Utah, 274, 276  
 Utakanund, 170  
 Utrecht, 83  
 VALENCIA, 100  
 Valencia, *Venezuela*, 323  
 Valenciennes, 92  
 Valetta, 130  
 Valladolid, 99  
*Valley, def.*, 22  
 Valparaiso, 308  
 Van, Lake, 139  
 Vancouver, 252  
 Van Diemen's Land, 218  
 Vanua Levu, *is.*, 227  
 Venezuela, 322-324  
 Venice, 123  
 Vera Cruz, 279  
 Verde, Cape, 326  
 Verkhoyansk, 154  
 Vermejo, *r.*, 295  
 Vermont, 261, 276  
 Veropa, 128  
 Versailles, 91  
 Verulam, 359  
 Verviers, 86  
 Vesuvius, *m.*, 129  
 Vichy, 98  
 Vicksburg, 267  
 Victoria, 186  
 Victoria, B.C., 252  
*Victoria, colony*, 210-213, 220  
 Victoria Falls, 328  
 Victoria Land, 267  
 Victoria Nyauza, 329  
 Vienna, 120  
 Villa Rica, 315  
 Vindhya Hills, 162  
 Virginia, 265, 276  
 Virginia City, 274  
 Virgin Islands, 289  
 Vistula, *r.*, 106  
 Viti Levu, *is.*, 227  
 Vitim high plain, 58  
 Vladikavkaz, 150  
 Vladivostok, 155  
*Volcanoes*, 20  
 Volga, *r.*, 145  
 Vosges Mountains, 101  
 Vulcano, 129  
 WADY HALFA, 313  
 Wagga-Wagga, 209  
 Waiakato, *r.*, 221  
 Waitaki, *r.*, 223  
 Wakatipu, Lake, 223  
 Waldeck, 109  
 Wallfisch Bay, 351  
 Wallachia, *prov.*, 132  
 Wallaroo, 211  
*Walloons*, 84  
 Wanaka, Lake, 223  
 Warsaw, 147  
 Wash, estuary, 66  
 Washington, 265  
 Washington, Mt., 261  
 Washington territory, 275, 276  
 Waterbury, 262  
 Waterloo, 85  
*Watershed, def.*, 18  
 Watling Island, 285  
 Weimar, 113  
 Wellington, 222  
 Wener, Lake, 71  
 Wentworth, 209  
 Weser, *r.*, 106  
 Westbury, 213  
 Western Australia, 215-216, 229  
 Western Ghats, *m.*, 162  
 Westerwald, *m.*, 106  
 West Indies, 285-290  
 Westland, *prov.*, 223  
 Westphalia, *prov.*, 114  
 Westport, 223  
 West Virginia, 265, 276  
 Wetter, Lake, 74  
 Wheat, 66, 89, 122, 145, 164, 257, 270  
 White Nile, 330  
 White Sea, 26, 147  
 Wloliczka, 121

- 
- |  |  |  |
|--|--|--|
| <p>Wien, 120<br/>         Wiesbaden, 114<br/>         Wilhelmshaven, 114<br/>         Williamstown, 212<br/>         Wilmington, 205<br/>         Wilna, 147<br/>         Wimmera, <i>dist.</i>, 210<br/>         Windward Channel, 287<br/>         Windward Islands, 285, 290, 321<br/>         Winds, 35<br/>         Wine, 89, 97, 122<br/>         Winnipeg, 251<br/>         Winter Berge, <i>m.</i>, 354<br/>         Winterthur, 104<br/>         Wisconsin, 260, 276<br/>         Wit-watersrand, 361<br/>         Wodonga, 212<br/>         Wollongong, 209<br/>         Württemberg, 109, 111<br/>         Wyndberg, 355<br/>         Wyoming, 273, 276</p> | <p>XARAYES lagoon, 318<br/>         Xeres. See <i>Jeres</i><br/>         Xingu, <i>r.</i>, 295<br/>         • YAKUTSK, 154<br/>         Yang-tse-Kiang, <i>r.</i>, 182, 184<br/>         Yarkand, 186<br/>         Yavari, <i>r.</i>, 303<br/>         Yellow River, 182<br/>         Yellow Sea, 26, 55, 182<br/>         Yellowstone Park, 274<br/>         Yellowstone, <i>r.</i>, 236<br/>         Yenchu, <i>prov.</i>, 140<br/>         Yenchuan, 189<br/>         Yenisei, <i>r.</i>, 154<br/>         Yeniseisk, 154<br/>         Yerba Maté, 315<br/>         Yezo. See <i>Eso</i><br/>         Yezd, 158<br/>         Yokohama, 192<br/>         York, 70<br/>         York Point, 231</p> | <p>Yosemite Valley, 275<br/>         Yucatan, <i>prov.</i>, 277<br/>         Yuersan, 189<br/>         Yukon, <i>r.</i>, 244<br/>         Yunnan, <i>prov.</i>, 186<br/>         ZAGAZIG, 341<br/>         Zambezi, <i>r.</i>, 328<br/>         Zambos, 278<br/>         Zante, <i>Is.</i>, 135<br/>         Zanzibar, <i>Is.</i>, 327, 346, 365<br/>         Zaragossa, 99<br/>         Zimmo, 173<br/>         Zirknitz, Lake of, 119<br/>         • Zollverein, 109<br/>         • Zuider Zee, 80<br/>         Zululand, 359<br/>         Zurich, 104<br/>         Zürich, Lake of, 102<br/>         Zuur Berge, <i>m.</i>, 353<br/>         Zwarte Berge, <i>m.</i>, 353</p> |
|--|--|--|

• THE END •



# MACMILLAN'S GEOGRAPHICAL SERIES.

EDITED BY ARCHIBALD GEIKIE, F.R.S.

*Director-General of the Geological Survey of the United Kingdom.*

The following List of Volumes is contemplated :—

1. **The Teaching of Geography.** A Practical Handbook for the use of Teachers. By ARCHIBALD GEIKIE, F.R.S.  
• Globe 8vo. 2s. [Ready.]

\* \* The aim of this volume is to advocate the claims of Geography as an educational Discipline of a high order, and to show how these claims may be practically recognised by teachers.

The *Times* says :—"The book is written with Mr. Geikie's well-known fluency and eloquence, and will be read with profit and pleasure by any one. Nothing, in our estimation, could be more satisfactory, or calculated to lead to more profitable results, than the suggestions contained in the introductory chapters for the elementary teaching of the subject. . . . Mr. Geikie's volume, as a whole, lifts geography into a new atmosphere. If his suggestions are faithfully followed in all our schools the result could not but be of the highest benefit to education all round. . . . It ought to be welcomed with open arms by all friends of real education."

The *Journal of Education* says :—"This simple and unpretentious hand-book for teachers serves as a fitting introduction to a new geographical series projected and edited by the same author. Such a series, the scope of which is indirectly indicated in this volume, is greatly needed—something less arid and formal than the tabular statements of the old-fashioned geographies, and more methodical and systematic than the modern geographical Readers. And no fitter editor for such a series could have been chosen. Not only has Dr. Geikie a wide and profound knowledge of his subject, but he has grasped the first principle of pedagogies,—that knowledge profits little or nothing unless it is gained in the right way, by observation and induction, and so becomes a living germ of future growth, not a store of ready material. This principle is the keynote of the hand-book and its various applications are admirably worked out, especially in the earlier stages."

The Rev. R. H. Quick, in the *Journal of Education* for October, says :—"As this book is still young, I may say what I believe every one will say when they know it, that it is one of the best contributions ever made in this country to the art of teaching. I should strongly recommend all young teachers to read it, and they will learn much that may be applied to many subjects of instruction besides geography."

*Nature* says :—"In this book Dr. Geikie renders great services to the cause both of education and of geography. . . . In the greater portion of his book Dr. Geikie is occupied in asserting and demonstrating the possibility of laying this foundation in general science outside the laboratory, and by a skilful use merely of the experience of common life, and he does so with signal success. If teachers will study this method, and if examining authorities will cease to thwart their efforts, there may be some chance of removing the book-bias from our teaching, and of making the decisions of our examiners more nearly resemble those of the great world in after life."

The *Saturday Review* says :—"Mr. Geikie treats his subject in its fullest acceptance. His general principles must commend themselves to every teacher who wants his pupils to form true conceptions of things, and not learn so many words. This volume is largely occupied with what is known in Germany as *Heimatskunde*, and as far as possible Mr. Geikie insists that this early teaching of what will ultimately lead up to geography must be an air teaching; and so much of it as takes place inside the school must deal with concrete things, and not with lessons from a text-book. So far as the pupils are concerned, Mr. Geikie would dispense with books entirely. With the present race of teachers, however, this is impossible. Mr. Geikie has certainly begun at the right end, therefore, in attempting to teach the teachers."

**2. The Elementary School Atlas.** With 24 Maps in Colours, specially designed to illustrate all Elementary Text-Books of Geography. By JOHN BARTHOLOMEW, F.R.G.S. 4to. 1s. *Ready.*

The 24 coloured maps in this Atlas are as follow:—(1) Six different Views of the World in Hemispheres; (2) Map of Europe illustrative of Geographical Terms; (3) Maps of Home Geography illustrating Map-making; (4) Diagrams illustrating Latitude and Longitude, Day and Night, &c.; (5) The World in Hemispheres, Comparative Area of Continent with Population; (6) The World, showing Height of Land and Depth of Sea; the World, showing Climate Zones; (7) The World, showing extent of the British Empire and main routes of Travel; (8) Europe, Political; (9) Central Europe, Physical; (10) Central Europe, Political; (11) British Isles, Orographical; (12) British Isles, River Basins and Rainfall; (13) British Isles, Railways and Coalfields; (14, 15) England; (16, 17) Scotland; (18, 19) Ireland; (20) Asia; (21) Africa; (22) N. America; (23) S. America; (24) Australasia. Mariner's compass on back of cover.

The *Saturday Review* says:—"Messrs. Macmillan are, we think, somewhat newcomers in the map-publishing trade. Their *Elementary School Atlas*, however, in which they have had the practised assistance of Mr. Bartholomew, is a good attempt, and ought to be widely used. The maps are good, and the illustrative diagrams, showing how to map out a given landscape, will be useful for imitation."

The *Guardian* says:—"Messrs. Macmillan's *Elementary School Atlas*, which we have received from Messrs. Macmillan, is almost a model of judicious selection and arrangement. Of the 24 maps, 12 are devoted to the British Isles, and the remainder to useful diagrams and geographical charts. This is as it should be. With the exception of the chart showing zones of climate, the plates are well-coloured, the names throughout are distinctly printed, and above all there are not too many of them."

The *Journal of Education* says:—"The map of Europe illustrating geographical terms and the sketches showing the difference between a map and a plan or picture, are good ideas well executed. It is also a good idea to place in a corner of the continental maps a map of England on the same scale."

The *School Board Circular* says:—"The *Elementary School Atlas* forms an excellent introduction for the little ones to the study of maps. It contains plans of towns, bird's-eye views, illustrations of geographical terms, views of the world from various aspects; diagrams illustrating the zones, the parallels of latitude and meridians of longitude, the alternation of day and night, the curvature of the earth's surface, the comparative populations of countries and the areas of continents and oceans; physical maps showing heights of land and water, zones of climate, rainfall, and river basins, and political maps of the Continents, the British Islands, and Australasia, all brightly coloured, and issued in linen cloth at a shilling."

The *Schoolmaster* says:—"Twenty-four pages of well-planned and skilfully-executed maps and illustrations, neatly bound in a strong and useful linen cover. Besides double-page coloured maps of England, Scotland, and Ireland, there are no less than four others illustrating the physical and commercial conditions of the British Isles. It is a very valuable 'first atlas' of the world."

## MACMILLAN'S GEOGRAPHICAL SERIES—Continued.

### 3. An Elementary Geography of the British Isles.

By ARCHIBALD GEIKIE, F.R.S. 18mo. 1s.

[Ready.]

The *Edinburgh World* says:—"Dr. A. Geikie is so well known by his able and lucid treatises on Geography that those who believe in combining some instruction in that branch of knowledge with the teaching of Geography will welcome a work like the *Elementary Geography of the British Isles*, issued in 'Macmillan's Geographical Series.' We have rarely seen, with a school-book at once so delightful and so valuable."

The *Geographical Magazine* says:—"This little volume of 'Macmillan's Geographical Series' has been prepared in accordance with the method of instruction explained and advocated in the author's book on *The Teaching of Geography*, which is the foundation of the whole series. The principle that lies at the root of Dr. Geikie's teaching is that geography should be a real and not merely a verbal study—that it should be treated so as to appeal to the observing powers, the judgment, and the imagination of the scholar, and not merely to his memory. This root-principle has been carefully observed in the present little book. It does not consist, like the old text-books and some of the new ones, of mere lists of names that are 'linked with no idea or association.' Each place, in accordance with the author's rule, is 'connected with some physical feature, some fact in history, or some other human interest.' That is excellent, and it is admirably worked out in the book. So also is the description of the physical features of the British Isles, on which the political geography is founded."

The *Athenaeum* says:—"A favourable specimen of what a book of this type should be. It is surprising how large an amount of information and what variety of matter the author has succeeded in crowding into 127 very small pages without rendering his little book repellent."

The *Scotsman* says:—"The book is prepared in accordance with the plan of instruction advocated in the author's *Teaching of Geography*, a work the value of which was pointed out here on its appearance. The book now before us lays special stress on the description of the physical features of the islands, in any way an admirable text-book for children."

The *Practical Teacher* says:—"This is an excellent little summary of the geography of our islands. The islands are first treated of as a whole, and their size, surface, climate, productions, and other interesting features described. Then each country is treated in greater detail, a short description of each county and its chief towns being added to the physical features. The style is clear and interesting, and the details are full without being unnaturally burdensome. The figures for areas and population are enclosed in brackets, and can thus be learned or otherwise, at the discretion of the teacher."

The *Guardian* says:—"A capital little book, in which the old-fashioned methods of teaching geography are thrown to the winds, and the subject becomes (what it too rarely was in the past) an instrument of real education. Those general principles which the author laid down in the introductory volume of Messrs. Macmillan's new Geographical Series are here shown in their application to a particular case, so that, instead of a mere list of names, we find a simple but vivid sketch of the physical features of the British Isles. The book is one of the best of its kind, and in some such way as this, the subject of Geography should be taught. It is no education of the mind, but a training of the memory with a crude mass of undigested facts and bewildering figures."

MACMILLAN AND CO.



**MACMILLAN'S GEOGRAPHICAL SERIES—Continued**

---

**An Elementary Class-Book of General Geography.** By  
HUGH ROBERT MILL, D.Sc., F.R.S.E. With Illustrations. Crown 8vo 3s 6d [Ready]

**Geography of the British Colonies.** By GEORGE M.  
DAWSON and ALEXANDER SUTHERLAND

[In preparation]

**Geography of Europe** By JAMES SIMES, M.A.  
With Illustrations [In the press]

**Geography of North America** By PROFESSOR N. S.  
SHALER. [In preparation]

**Geography of India** By H. F. BLANFORD, F.G.S.

**Geography of Asia.**

**Geography of Africa.**

**Geography of the Oceans and Oceanic Islands**

**Advanced Class-Book of the Geography of Britain**

**Geography of Australia and New Zealand.**

**Geography of America.**

**Advanced Class-Book of the Geography of Europe**

---

MACMILLAN AND CO., LONDON

# MACMILLAN AND CO.'S PUBLICATIONS

## SCIENCE PRIMERS

Under the joint patronage of Professor Huxley, Sir H. E. Roscoe, and Professor Balfour Stewart  
With Illustrations. Tenmo 1s. each

**INTRODUCTION.** By THOMAS HENRY HUXLEY, F.R.S.

**CHEMISTRY.** By Sir HENRY ROSCOE, F.R.S. With Questions

**PHYSICS.** By BALFOUR STEWART, F.R.S. With Questions

**PHYSICAL GEOGRAPHY.** By A. GRIFFIN, LL.D., F.R.S.  
New Edition, With Questions

**GEOLOGY.** By ARCHIBALD GRIFFIN, F.R.S.

**PHYSIOLOGY.** By MICHAEL FOSTER, M.D., F.R.S.

**ASTRONOMY.** By J. N. LOCKYER, F.R.S.

**BOTANY.** By Sir J. D. HOOKER, C.B., F.R.S.

**LOGIC.** By W. STANLEY JEVONS, LL.D., M.A., F.R.S.

**POLITICAL ECONOMY.** By W. STANLEY JEVONS, LL.D.,  
M.A., F.R.S.

**CLASS BOOK OF GEOGRAPHY.** By C. B. CLARKE, M.A.,  
F.L.S., F.G.S., F.R.S. New Edition, revised 1889, with  
Lighten Coloured Maps. Fcap 8vo. Paper Covers, 3s.,  
Cloth, 3s. 6d.

**A SHORT GEOGRAPHY OF THE BRITISH ISLANDS**  
By JOHN RICHARD GRIN and ARTHUR STOFFORD GRIN  
With Maps. 14 8vo. 3s. 6d.

**PHYSIOGRAPHY.** An Introduction to the Study of Nature  
By THOMAS HENRY HUXLEY, F.R.S. With numerous Illustrations  
and Coloured Plates. New and Cheap Edition.  
Crown 8vo. 6s.

**OUTLINES OF PHYSIOGRAPHY—THE MOVEMENTS  
OF THE EARTH.** By J. NORMAN LOCKYER, F.R.S.,  
Correspondent of the Institute of France, Foreign Member of  
the Academy of Sciences of Rome, etc., etc., Professor of  
Astronomical Physics in the Normal School of Science and  
Astronomy. Phymograph for the Science and Art Department  
With Illustrations. Crown-8vo. Sewed, 1s. 6d.

MACMILLAN AND CO., LONDON

# WORKS BY ARCHIBALD GEIKIE, F.R.S., LL.D.,

Director General of the Geological Survey of the United Kingdom and Director of the Museum of Practical Geology, Jermyn Street, London; formerly Murchison Professor of Geology and Mineralogy in the University of Edinburgh

**Primer of Physical Geography** With Illustrations  
18mo 1 [Seven Shillings]

**Primer of Geology** With Illustrations 18mo 1  
[Seven Shillings]

**Elementary Lessons in Physical Geography** With  
numerous Illustrations Fcap 8vo 1 6d

**Questions on the Same** 1 6d

**Outlines of Field Geology** With numerous Illustrations  
Crown 8vo 3s 6d

**Text-Book of Geology** With Illustrations Second  
Edition (Seventh Thousand) Medium 8vo 7s 6d

The Text-Book in our estimation contains a more complete account of the science of Geology in its latest development, than is to be found in any similar English work. It is a clear, straight road, and in methodical manner he brings out the principles of the science, and then through all their ramifications, a layman, but all his facts and deductions. This is as it should be. — *The Times*

**Class-Book of Geology** With upwards of 200 New  
Illustrations

**Geological Sketches at Home and Abroad** With  
Illustrations 8vo 10s 6d

**The Scenery of Scotland** in its Physical Geology, as seen from the Coast of Europe  
larger Crown 8vo 2s 6d

JOHN AND CO, LONDON.





